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General Scientific

THE COST OF INFECTIOUS DISEASES.*

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Beginning with the year 1900, the Division of Vital Statistics under the direction of the Bureau of the Census has annually published a volume of mortality statistics. These statistics are compiled from the returns of what is designated as the registration area, comprising certain States in which the registration laws are of suitable character and sufficiently well enforced to insure at least approximately complete returns and includes in addition certain cities in non-registration States in which statistics of death are collected under effective local ordinances. By approximately complete returns it is understood that the reported deaths shall be at least equal to 90 per cent. of the actual deaths. In 1900 the registration States were as follows: Connecticut, District of Columbia, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island, Vermont.

In 1910 in addition to these were the following States: California, Colorado, Maryland, Minnesota, Montana, North Carolina, Ohio, Pennsylvania, Utah, Washington, Wisconsin.

It is a significant and encouraging fact that the population of the registration area in 1910 was 53,843,896, which is 58.3 per cent. of the entire population of continental United States. In 1880 it was 17 per cent. The American Medical Association and the American Public Health Association have been of great assistance to the Bureau of the Census in extending their hearty support and co-operation for improving the registration of deaths and the extension of the registration area, and I am sure the American Hospital Association can and will lend its influence in the same direction.

The conclusions reached in this paper concerning the effect of tuberculosis upon the national health and the monetary losses sustained thereon are drawn from the census report for 1900 and from data given in the above-mentioned reports on mortality statistics. The census reports for 1900 are used because the population statistics for 1910, by ages, which are needed in connection with reported deaths, are not yet tabulated. The reports of the Bureau of the Census for the entire area of the United States for 1900 indicate that the annual death rate at practically all ages from twenty to sixty, inclusive, is increased about two per thousand on account of tuberculosis. The following table, which has been calculated in accordance with well-known actuarial methods, will serve to show in some detail how this disease affects the death rate.

Comparative Table showing the Death Rate per Annum per 1,000 Persons for Certain Ages Between 20 and 70 by the United States Twelfth Census Returns for Males, when Tuberculosis is Present, when Not Present, and the Difference.

DEATH RATE PER ANNUM PER 1,000.

Age	When Tuberculosis is Present	Not Present	Difference
20	6.040	4.590	1.450
25	7.020	5.021	1,999
30	7.416	5.298	2.118
40	9.417	7,376	2.041
50	13.926	11.915	2.011
60	25.177	22.981	2.196
70	53.873	51.257	2.616

From an examination of the table it appears that when tuberculosis is present the annual death rate per thousand at age twenty is 6.040, and if there were no deaths from tuberculosis the death rate would be reduced to 4.590. The difference column shows that the effect of the disease becomes more marked with advancing age; in other words, the danger of exposure to tuberculosis is greater at age sixty than at age twenty. We are more likely to notice the effect of this disease, however, at a younger age like twenty-five, for at this age it is the cause of two out of every seven deaths, whereas at sixty it is the cause of two out of every twenty-five deaths. As a matter of fact, the above table shows that in a population of one million at age twenty-five 1,999 deaths will occur during the year from tuberculosis, while in a population of one million at age sixty 2,196 deaths will occur from the same cause, or 197 more fatal terminations under like conditions will happen at age sixty than at age twenty-five.

It is interesting to examine the effect of tuberculosis on the expectation of life. By the expectation of life at any age is meant the average future or after lifetime at that age. The expectation of life of *every person in the community* aged twenty years is reduced two years and fifty-eight days by tuber-

* Read at the 1912 meeting of the American Hospital Association, Detroit, Mich.

culosis. Even at age forty the loss in the expectation of life is one year and fifty-six days, and the figures are not materially reduced, when the age is considered in connection therewith, at the more advanced ages.

The presence of a disease in any group of persons or in any community inevitably decreases the total future lifetime of that group and a direct measure of the monetary loss due to such disease can be found in the *number of years taken out of the possible future years of lifetime of the group*. For example, at age twenty the total loss in years of future lifetime sustained by a group of one million young men is 2,434,412 years. Assuming in round numbers that two million of these years of future lifetime are lost by the original group of one million persons aged twenty before they attain age seventy, it is clear that these years are lost during the wealth-producing period of life. On the basis that each year represents a loss of one hundred dollars in wealth-producing capacity to the nation, we should have a loss on this group of two hundred million dollars, the interest factor being neglected. As there are at the present time in this country about one million young men twenty years of age, the loss which this country may expect under present conditions to sustain on this group alone, the interest factor being neglected, is in round numbers about two hundred millions of dollars. This estimate is based on a unit wealth-producing capacity of one hundred dollars per annum; accordingly, if the actual average wealth-producing capacity of the individual per annum be double or any other multiple of this sum the total loss sustained is correspondingly increased.

The above illustration has been employed to show, in a simple way, how the loss occurs. It had to do with but a single group of individuals at age twenty and the interest-earning power of money was neglected in making the calculation roughly. Let us now address ourselves briefly to a more exact discussion of the problem of the cost of tuberculosis. Few people are aware of the enormous loss in wealth which this country suffers on account of tuberculosis. The *amount of this loss* has a special significance when considered in connection with the cost of an organized campaign having for its object the practical elimination of tuberculosis. To accomplish this result it is essential that extensive and continuous financial assistance be forthcoming for a considerable period of years, and the question arises as to how much the State or Nation would be justified in spending to check the disease within its boundaries. I have considered this subject in some detail and derived tables* from the population and vital statistics of the Twelfth Census of the United States by means of which the monetary loss sustained by a community of given population can easily be computed. It is assumed that on the average each male member of the community between the ages twenty and sixty can add, over and above his living expenses, a net sum of one hundred dollars each year to the wealth of the community. This ability to produce wealth is assumed to continue until age seventy and then cease. The total gain which is thus contributed is found for each age, and the equivalent capitalized sum is computed, taking into account the interest factor, five per cent., and the mortality factor, determining the probable length of life. The gain in wealth is first computed on the assumption that there are no deaths from tuberculosis, and then again on the assumption that the conditions as regards tuberculosis are those which now prevail. The gain in the former case will, of course, be greater than in the latter, because with deaths from tuberculosis eliminated people would live longer and hence contribute for a longer period of years to the wealth of the community. This excess, *which would be realized if there were no deaths from tuberculosis*, is the monetary loss which the community must suffer owing to the presence of the disease. The following table gives these figures for certain ages:

Present or Capitalized Value at Certain Ages Computed with 5% Interest of a Wealth Increment of $100 per Annum, Continuing Until Age Seventy.

Age	When Tuberculosis is Not Present	When Tuberculosis is Present	Loss in Value at Each Age
20	$1,642.29	$1,594.78	$47.51
25	1,589.44	1,543.63	45.81
30	1,522.37	1,481.16	41.21
35	1,438.62	1,402.92	35.70
40	1,337.78	1,308.06	29.72
45	1,214.80	1,190.59	24.21
50	1,066.86	1,048.14	18.72
55	887.08	873.88	13.20
60	667.79	660.28	7.51

The second column shows that if tuberculosis were not present the capitalized value, computed at five per cent., of the yearly one-hundred-dollar wealth addition produced by the young man aged twenty working until aged seventy would be $1,642.29, while according to the third column the capitalized value of the annual one-hundred-dollar wealth increment of the same young man under prevailing conditions—that is, with tuberculosis present—is reduced to $1,594.78. The difference, which represents the capitalized value of the loss at this age, is $47.51.

The loss in value as shown in this table decreases with the age, beginning with $47.51 at age twenty and decreasing to $7.51 at age sixty. When the loss values in this table are applied to the age group of men from twenty to sixty as shown in the United States Census of 1900 the resulting capitalized total loss amounts to $671,018,025. This loss is calculated upon a unit annual wealth-producing basis of one hundred dollars. This is, of course, an economic factor more or less subject to variation of opinion. Some writers have taken three hundred dollars to represent the average wealth-producing capacity per annum. This would mean a total loss whose present or capitalized value is $2,013,054,075. On the basis of the increase in population from 1900 to 1912 it would be safe to increase the figures above given by one-half of themselves. We may say, therefore, in round numbers that under prevailing conditions as regards tuberculosis the capitalized value of the loss which will be sustained on the present male population between ages twenty and sixty in the United States is not less than one billion dollars. This is on the assumption of a wealth-producing capacity of one hundred dollars per annum. If we assume the wealth-producing capacity to be three hundred dollars per annum the loss which will be sustained upon the above mentioned group reaches the enormous sum of three billion dollars.

While these figures are startling in magnitude, I wish to emphasize that they are more than conservative and may with certainty be set down as *minimum* figures. The chief and almost self-evident conditions which tend to make the results minimum are the following:

(a) They are based upon *reported* deaths from pulmonary tuberculosis. It is well known that these *reported* cases are considerably below the *actual* number. It is unnecessary to go into any detail here as to the causes which lead to the concealment of deaths from this disease.

(b) The figures given are based on cases of pulmonary tuberculosis with fatal termination, hence the effect in the decrease in *length* but *not in breadth* of life is considered. It is sufficient to call attention to the fact that the presence of tuberculosis in a community involves a tremendous increase in morbidity; that cases without fatal termination are far more numerous than those with fatal termination; that tuberculosis morbidity subjects the community to the attack of other diseases, with the result that many of such cases, owing to lowered vitality, terminate fatally; that the earning or wealth-producing period in both fatal and non-fatal cases of pulmonary tuberculosis or other diseases which have invaded the community owing to tuberculosis morbidity must necessarily be

* James W. Glover. The Monetary Loss in the United States Due to Tuberculosis, Based on the Returns of the Twelfth Census of the United States. Transactions of the Sixth International Congress on Tuberculosis, Vol. 5, pp. 55-87.

considerably diminished. The *unit loss rates* obtained in the preceding computations are based upon the assumption that the individual can produce wealth at the average rate of one hundred dollars per annum until the age of seventy, but it is clear that the tuberculous individual must be incapacitated whether the case terminates fatally or not for a number of years within the wealth-producing period. During these years instead of adding he is actually subtracting wealth from the community. The individual with lowered vitality produces a smaller wealth increment and the individual who cannot work becomes a financial burden upon the community.

(c) The present figures relate only to males between ages twenty and sixty working until age seventy. The loss due to the burden of tuberculosis on the male population under twenty and over sixty is not counted. As it happens that members of these groups are largely dependent upon the productive capacity of the main group between twenty and sixty, it follows that tuberculosis in these dependent groups would serve to produce a greater drain upon the supporting group.

(d) The loss results refer to a *fixed time* and to a *particular group*, namely, the present value of the future loss which will be sustained on the *group living at that fixed time between ages twenty and sixty*. It is evident that as this group moves on in time, other groups of the living will come in, and upon these new groups additional loss will be sustained. For example, the group now living between ages fifteen to nineteen in five years will be a group between ages twenty to twenty-four, a group upon which we have seen the loss is very great.

(e) The monetary loss due to tuberculosis among females has not been considered at all.

The logical conclusion to be drawn from the preceding figures is that any State or community with an average tuberculosis death rate in excess of 140 per 100,000 of population can profitably expend at least ten dollars per capita of the total population if the disease can thereby be practically eradicated.

It seems to me that it is well worth while for our legislative and municipal authorities to to give this matter their serious consideration, and deal with it in a manner whose scope is appropriate to the magnitude of the problem. There are few, if any, problems before our nation of equal importance. While this paper deals specifically with the one disease, tuberculosis, it is clear that the same principles apply to the whole list of preventable diseases which are now sapping the vital energies of the nation. A reasonable minimum death rate should be assigned for each preventable disease and every means within our power employed to reduce the higher rates now prevailing to these figures. With respect to tuberculosis, the Federal Government, each State, and every large municipality should construct tuberculosis sanatoriums to be conducted upon a liberal and adequate scale; should build, equip and endow them not for five, but for fifty years, and all advanced and open cases of this disease should be segregated therein and cared for at public expense. This step would have a decided effect in diminishing the spread of the disease, for it would mean the effective isolation of many dangerous centers of tuberculous infection. A widespread and effective campaign of education should be undertaken. These, of course, are only suggestions of a general nature. The point which the writer particularly desires to emphasize is that the figures contained in this article justify the early organization and financing of a national campaign against the great white plague under the authority and support of the Federal Government, the several States, and their municipalities. While much good can be and has been accomplished by individual initiative, by public subscription, and by the tuberculosis stamp movement, they are all hopelessly inadequate to successfully cope with this big problem without the aid of the State. The financial support for this tremendous battle must not be subject to the variations and uncertainty of private gift and unorganized public subscription. It must have the financial backing and support of the public represented through its legislative and governing bodies.

THE MICROZYMAS AND THE FORMATION OF THE RED AND WHITE BLOOD CELLS.

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Salisbury's description of the formation of the red and white blood cells in the *American Journal of the Medical Sciences* of April, 1866, has, in my opinion, never been equalled. In this article on the Spleen in which he claims that the arterial capillaries terminate in tubular glandules followed by oval splenic bodies, he says, in part:

"The large nuclei of the parent cells of the epithelial lining of the tubular glandules are exceedingly transparent and highly refractive; so much so that they are with difficulty traced. These when carefully examined immediately after death, have either a spherical or oval form, according to the degree of their distension. It is very difficult, however, to trace their true outline. Their walls are highly elastic. When actively engaged in their function they are capable of considerable distension.

"The nucleus is usually more plainly visible than the walls of the parent cell. The peculiar function of this epithelium is to organize a large, and at first, exceedingly transparent and highly refractive bladder-like cell, the envelope of which is so thin, delicate and pliable, that it has more the appearance of a globule without cell walls than of a cell. It is to all appearance at first entirely destitute of any visible contents. Its walls,

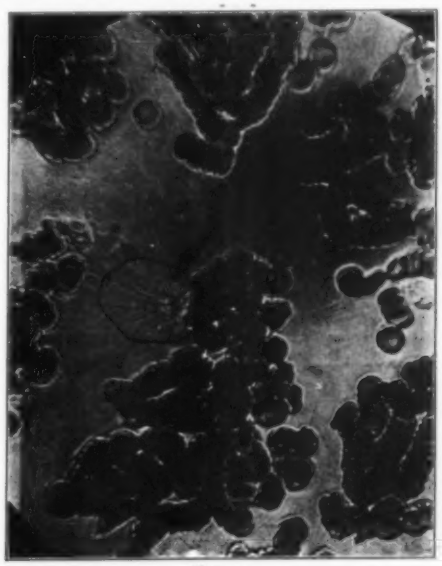

FIG. 1.

however, soon become more and more firm, a central nucleus appears which gradually grows more and more evident, and this soon is surrounded by little globules (They would be called granules by some.—Author). We now have before us a colorless corpuscle of the blood*, or really a fibrin cell, or a cell that becomes transformed into filamentous products; for as soon as it enters the extended plexus of elastic thin-walled capillaries, it hugs and sticks to the wall of the vessel, creeping along slowly, and as soon as nature sends out a thin hair-like process which continues to elongate as the cell slowly progresses, and finally is transformed, all but the nucleus, into an exceedingly fine and highly transparent and friable fibrin thread. The central nucleus, when it escapes, is irregular in outline, with its walls more or less flattened and folded. This takes up hematin and a highly plastic fluid; becomes smooth, highly refractive, and distended, and forms the blood disc."

The article is unusual and stamps the author as a natural born man of science, with the patience of a German and the

* The globules or granules in this corpuscle contain microzymas and, like bees making honey, they seem to have a part in spinning the fibrin filament.

insight of a genius. On the other hand to many and perhaps, to the one who has become accustomed to the theory that the cell is the unit of histology, the thought will arise, what makes the cell? Is there anything more minute? What makes the fibrin and what causes the cell to spin? As it is self evident that there must be life to cause the spinning of these cells, we ask whence does it come?

The only answer I shall attempt to give is a finer and thus a more conclusive one than the cellular theory. I might perhaps better express myself by calling my explanation another step in histology and that is the microzymian theory. The discovery of the microzyma is based on the "master experiment" of Prof. A. Bechamp in 1854-'55 (*Comptes Rendus Tom* XL, p. 436) and was performed in the University of Montpelier, France. He took three specimens of cane-sugared water (distilled). These were placed in ground glass stoppered bottles. In one he put chloride of zinc, in another chloride of calcium, and in the third nothing. There was in each a little air space left at the top. These three specimens he let stand in a cool place in his laboratory for several months, and on finally examining them he found that in the one in which he had placed nothing there had developed a mould. In other experiments at the time he used creosote and bichloride of mercury in the place of the calcium salts, all of which prevented the formation of this mould.

I may mention that this was the first demonstration of germs of the air and the antiseptic theory, although the credit has been given to another. However, this controversy is foreign to my purpose, which is to show that this was the original experiment to demonstrate the existence of mycrozymas which Bechamp found in this mould, and afterward demonstrated them to be very abundant not only in calcareous rocks but in vegetable life and, indeed, in all nature, including the blood cells. This fact I have verified as mentioned in a previous article in THE MEDICAL TIMES (October, 1912) on the Hen's Egg. Their growth, perhaps not yet shown to be like ordinary germs on an artificial media, but in their natural state in the tissues, proves these immobile ferments to be alive, and they are imperishable except by fire, and are thus the physiological unit of life, instead of the cell, of which they are and can be easily proved to be a component. It therefore appears evident that the microzymas are the life that spins the cell and the fibrin (see Fig. 1) (Migraf 1).

The term microzyma, meaning a small ferment, if such it be (and it is my firm conviction that it is), establishes cell formation as a fermentative process, and the white cells in the blood stream as abnormal, but necessary, animal ferments or yeasts. Looking at the blood from this point of view opens up the subject in a new light and widens the haematological field of research. It was my object in 1897 in making the first moving pictures of microscopic life and blood cells (*Scientific American*, July 14, 1897) to demonstrate the above phenomena of blood cell formation and fibrin spinning, and later by my invention of the "migraf" to demonstrate the microzymas in a simple way to a number of people at one time. By means of this instrument students can easily see the ameboid changes of the leucocyte as well as the naked microzymas in rotten fibrin filaments of fresh blood. Leukæmia, a clogging up of the main blood-forming organ, the spleen, by faulty metabolism, is easily explained by the above description of the plasma-cell formation, and the phagocytic theory also can be more simply expressed and new light thrown on the leucocyte bacillus absorption theory.

The ultra-violet light is now showing by Grawitz's researches, I understand, that the different polynuclear leucocytes are not much different than what might be called a regular leucocyte, and this is all explainable by the plasma cell and its microzymian contents. And so again we often have the mulberry corpuscle or crenated red cell with its punctate points, which points are nothing more nor less than the location of one or several microzymas beneath or rather within. These, naked, are calculated to be about one fifty-thousandth of an inch in diameter, and when the red cell dies they, with or without their investing membrane, become visible; if this occurs shortly after the blood is drawn it shows weakness or low vitality. Modifications of this cell have been called degeneration cells by some.

Fig. 2.

On the above basis it is readily seen that the blood may be formed not only in the spleen, lacteal glands, mesenteries and bone marrow, but wherever there are lymphatics, and this is pretty much all over the body.

No doubt the wonderful work of Dr. Alexis Carrel of the Rockefeller Institute in transplanting live organs is due to the preservation of the normal microzymas in their albumenoid covering so they can reassert their normal life by some ingenious preparation and technique of Dr. Carrel's. If these microzymas devoluted into bacilli this result could not be obtained, for decomposition would take place.

The above has been my interpretation of blood formation for a long time, and I publish the matter now for others to ponder over and to try for themselves; and would add that the man who has a well-equipped laboratory has an immense field for new and original investigation.

Benign Epithelioma.

M. L. Heidingsfeld (*J. A. M. A.*) questions the commonly held opinion that skin diseases afford special advantages for the study of morphologic changes incident to malignancy. No malignant tumor of the skin can attain sufficient size to permit macroscopic recognition and at the same time demonstrate its genesis and origin from some definite follicle, gland or epidermal structure. There is, however, a certain class of skin tumors, the so-called multiple benignant cystic epitheliomas, which present some unusual features for the study of the genesis after it is well established. Five cases of this type are discussed as regards their morphology. He has also included in his consideration a case of morphea-like epithelioma and a case of carcinoma epitheliale cicatrisans on account of certain features they afford for comparative study. The conclusion that he reaches is that the genesis and fundamental origin of all forms of epithelioma must, in the light of our present knowledge, remain a more or less unsettled question. While it is clinically true that moles, etc., sometimes take on malignancy, the vast majority show no such etiology. If malignancy starts from hair follicles, sweat glands and other preformed cellular structures, cases should be more frequent.

CHRONIC GASTRITIS.

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For many years chronic gastritis has been regarded as synonymous with chronic dyspepsia or chronic indigestion. The term has been applied indiscriminately to many forms of gastric disease, both functional and organic.

We owe our first definite knowledge to Von Leube, who in 1871 introduced the use of the stomach tube in the diagnosis of gastric conditions. Chronic gastritis can exist both as a separate clinical entity or as a complication in disturbances of the circulatory system, and in the wasting diseases, such as tuberculosis, leukaemia, diabetes, etc.

It is my purpose to briefly review its symptomatology, diagnosis and treatment (realizing at the same time that there is little new or original to add to the subject). Before starting, one word as to the frequency; in 842 patients, the diagnosis of simple chronic gastritis was made only 37 times. I have taken these cases as the basis of this paper. By simple chronic gastritis, we mean a catarrhal inflammation of the gastric mucous membrane, usually associated with an increased production of mucus and sometimes accompanied by chemical changes in the gastric juice.

In analysis of the histories one is impressed by the following points:

1. That the history is neither characteristic nor diagnostic.

2. That the onset is often insidious with exacerbations and intermissions; that actual pain is rare; that there is more often a complaint of a heavy grinding sensation localized in the epigastrium, coming immediately or shortly after meals; or an "all gone" gnawing, empty feeling three quarters of an hour after food, as the stomach empties itself. In these cases the distress was in some instances referred to the region of the gall bladder, although subsequent observations gave no reason to suspect that organ to be at fault. As a rule the distress was more pronounced after the ingestion of coarse foods, such as beef, radish, cabbage, etc., being due probably to the irritation of the gastric mucosa; but again it was noted after food of any kind. Pyrosis was present in over fifty per cent. and did not bear any definite relation to the degree of acidity.

Hertz of London in his experiments on the sensibility of the alimentary tract has shown that a considerable excess of hydrochloric acid (2.0 introduced in the stomach) does not give rise to any burning but that this sensation invariably followed the introduction of alcohol. He suggests in the way of explanation, that the alcohol which can be formed in considerable quantities by the action of yeasts and carbohydrates is accountable for this symptom.

NAUSEA AND VOMITING.

These were infrequent. Nausea, when present, was most quently complained of when the stomach was empty, usually before breakfast. Vomiting as a result of this nausea was absent, although in several instances the patients had accustomed themselves to induce it, either to relieve the nausea or the distress.

As regards the bowels, the rule was a moderate degree of constipation. Five cases complained of alternating diarrhea and constipation, and one case with a total acidity of ten, had a persistent morning diarrhea.

The feces presented no diagnostic features. Flatulence was present in the majority of cases with constipation, due probably to the stagnation of the ingesta.

CONSTITUTIONAL SYMPTOMS.

These were not marked. The greater number of patients presented an appearance of health and were well nourished. In a few of the more advanced cases, with well defined gastric atony, the nutrition suffered owing largely to the reduced diet which they had resorted to as a relief from their distress. Lassitude, lack of inclination for mental and physical work was in all a pronounced symptom.

With the exception of three women who showed a well marked secondary anæmia the blood gave no distinctive changes either in the red or white cells.

In going over the histories and selecting these cases I have been careful to exclude those presenting the so-called enteroptotic habit, viz., the long "barrel shaped" chest with the acute costal angle, as my experience has been with that of Cohnheim, Kuttner and others, that in these people the predisposition to functional neurosis is latent, if it does not already exist, and if the organic disease is present its symptomatology and anatomic findings are masked by the neurotic condition, therefore, they do not properly belong to this class, any more than the secondary type of gastritis which is dependent on tuberculosis or nephritis.

PHYSICAL EXAMINATION.

The patients were as a rule well nourished. The tongue was in no way indicative of the stomach condition, but apparently depended more on the character of the food, the amount eaten, and the degree of mastication. In over two-thirds of the patients, the pharyngeal mucous membrane was dry, glazed, and somewhat hyperaesthetic.

The abdomen presented a broad costal angle and palpation demonstrated nothing more than a moderate degree of tenderness or soreness over the epigastrium or in the region of the gall bladder.

The diagnosis is impossible to make without the aid of the gastric contents, and not only one, but several test breakfasts should be taken in order to determine accurately the degree and the stage of the disease.

The test breakfast will show one of four conditions:

1. Normal acidity having a total acidity between 50-60.
2. Hyperacidity, total acidity 60-100.
3. Hyperacidity 50-20.
4. Anacidity, total acidity below 20, no free hydrochloric.

Recently Pilcher, under the title Achlorhydria hemorrhagica has reported what he considers to be a distinct clinical type, characterized by the absence of hydrochloric acid and the presence of occult blood and erosions in mucous membrane. I cannot accept this without further questions, as I believe it to be a reflex from some extra gastric condition, such as the gall bladder or appendix and not a distinct type. In the light of the researches of Pavlov, it is a question in my mind whether these changes in acidity are not more relative than actual. He has shown in his sham feeding experiments that the gastric juice as it flows from the glands possesses a constant acidity. After its secretion it flows over an alkaline mucous membrane, coated more or less with mucous, both of which materially reduce its acidity. Also that the acidity of the juice depends on the rate of the secretion, viz., that it has less time to become neutralized where the secretion is rapid. It would seem to me, therefore, that in the earlier stages where there is an excess of glandular activity and relatively little mucus, that we might expect a gastric juice of higher acidity; and that in the later stages of the disease where secretion of mucus is more abundant, and the glands less active, we should expect a relatively lower acidity due to its neutralization.

5. Stenosing gastritis. Rare form.

The presence of blood is frequently encountered in taking test breakfasts from these patients, due undoubtedly to the congested state of the gastric mucosa, or possibly from slight trauma to pharynx or œsophagus in passing the tube.

In my series of cases there were:

29 men
8 women
- 3 showed normal acidity
- 9 hyperacidity
- 19 subacidity
- 8 anacidity.

Atony was present in varying degree in all save five cases. In the cases of normal acidity it was present in a moderate degree, in fact, it was more the presence of the atony than the actual gastritis which led them to seek advice. One case from the anacid group and four from the subacid gave no apparent evidence of atony. In the cases of normal acidity an Ewald test breakfast showed 30-50 c.c. of well chymified food remains with an admixture of white viscid mucus. This can be readily demonstrated by drawing up the mucus on a small hook. This mucus must be distinguished from that of nasopharyngeal origin, which forms a separate layer floating on top of the breakfast, is grayish white in color, and by pushing it aside separates readily from the food contents.

In the hyperacidities, the food remains are more finely divided, having more the consistency of a fine flaky powder. In the lower acidities, the food contents have a lumpy appearance, as if they had been imperfectly masticated, and in all my cases the mucus was present in relatively larger amounts.

No ratio could be established between the duration of the disease and the condition of the gastric contents. The enzymes and zymogens were present in all cases but depressed in activity in the sub and anacid types. In the atonic stomach the test breakfast shows quantities varying from 75-150 c.c. or even more. On standing it will separate into two layers, the lower consisting of the solids and the upper of the fluid; if pharyngeal mucus is present it floats on the top of the liquid portion. The proportion of the solids to the fluid will vary from a third to two-thirds of the total quantity depending on the degree of atony. I have found this condition in many cases and have substantiated by other tests and believe it to be of considerable worth in making an approximate estimation of gastric mobility. The fasting stomach 9 to 10 hours after a roast beef sandwich was either empty or contained 15-20 c.c. of clear viscid fluid, consisting of an admixture of mucus and saliva, under the microscope showing nothing save some epithelium, or possibly a few starchy particles mixed in the mucus.

There is no value to be derived from a histological examination of erosions. There was no free hydrochloric acid, and the enzymes and zymogens were absent. The mucus varied in quantity; in a few of the more marked cases the secretion of mucus was continuous, so that in a lavage given before breakfast after a night's fast it was present in appreciable amounts. In the milder or earlier cases it was demonstrable only after the glandular activity had been stimulated by the ingestion of food.

The first essential in considering treatment naturally is to determine the etiological factor or factors and as far as possible to correct them. To this end the attention must be directed to a few common points of general hygiene.

I mention them briefly as follows:

1. Prohibition of alcohol.
2. Limitation of tobacco.
3. Appropriate treatment of diseased gums and teeth by a dentist.
4. Exercise regulated to the individual requirements.
5. Sufficient mastication.
6. Regular hours.

No hard and fast rules can be made as regards diet for each case will be influenced by the condition of the gastric secretion and motility. In general it should be said that food should be good, nutritious, as bland and non-irritating as possible and of sufficient variety not to become irksome. Cannon has shown that coarse foodstuffs are notably retarded in their exit from the stomach, and consequently act as irritants. When marked glandular activity exists as in the hyperacid stage, a diet rich in proteids, in spite of its high combining power with hydrochloric acid tends to further increase this activity.

In my experience the best results are obtained by restricting or cutting out the coarse fibred meats, as beef, and prohibiting the use of such scratchy articles as cabbage, raw celery, graham bread, raw fruit, etc. Where atony is present water should not be allowed with meals or its amount limited as the extra bulk acts as a mechanical hindrance to the peristaltic action of the stomach.

In the mechanical treatment lavage is a most useful adjunct. It not only removes the mucus, but in the expansion and contraction of the stomach wall stimulates the unstripped muscle fibres. In the milder degree of gastritis where mucus is not a continuous secretion, washing after a night's fast fails to reveal its presence. In these cases if it is practiced say four hours after an ordinary meal it can usually be demonstrated. I have never seen that medicated lavage possesses any advantage over plain warm water. The presence of mucus is best shown by splashing a hook around in the washings and if it is present it can be drawn up in white glairy strings. Mere inspection as a rule fails to show its presence, as it is of the same color and held in solution by the water.

TREATMENT.

A vast host of drugs has been advocated, but the majority of them are useless. In the well nourished cases, with normal or higher acidity I have used the alkaline saline waters, as Carlsbad in the form of imported salts. What their action is authorities seem to differ, but the general consensus of opinion is that they do exert a beneficial influence on the gastric mucosa by stimulating the secretion of bile, the motor function, dissolving mucus and reducing the acidity. In those cases of less robust constitution vichy salts may be substituted in place of Carlsbad, as its prolonged use is less debilitating. Where hyperacidity exits, the use of alkalies is indicated as soda bicarb. or magnesia oxide.

In the subacid cases Kissengen salts have been advocated and as far as my experience goes, they have proven of benefit, but their use has rested largely on an empirical basis. Recently Van Norden and Dapper have endeavored to determine their true physiological value. Their observations were carried out on a large number of gastric conditions, and one very interesting conclusion was that in many cases of gastric disorder, especially chronic gastritis, the use of saline waters leads to an active increase in the hydrochloric acid secretion. Again, that in cases of hyperacidity a moderate use of the salines tends to decrease the hydrochloric acid secretion. This certainly sounds paradoxical, but the high standing of these clinicians leaves no room for scepticism. When constipation is present, the temperature of the saline should be reduced, as the cooler the water, the more laxative is the effect; where a tendency to diarrhea is present they should be given as hot as possible, slipping them preferably through a tube.

Those cases where there is no free hydrochloric and a total acidity of 20 or under; hydrochloric by itself or in combination with resorcin, especially where atony is present, is of decided benefit. The Kissengen salts should be given a half hour before meals and the hydrochloric not earlier than half an hour after meals. In those cases where overwork and worry are prominent factors, a trip to some of the European or American spas will often prove of great benefit, not so much on account of the waters, as the regular life, simple diet and the freedom from care.

PROGNOSIS.

As regards life the prognosis is excellent; that the advanced cases can be cured in the strict sense of the word, I doubt; but in all cases under ordinary conditions of life, they should obtain relief from their symptoms. The consideration of the differential diagnosis I have purposely avoided as it does not seem possible that it can be duly covered in a paper of this scope. I would only say that one must bear in mind the functional neuroses and gastric carcinoma.

Hammerschlag claims to have separated micro-organisms from the intestinal contents of a diabetic patient which produced glycosuria in animals when injected subcutaneously or introduced into the stomach.

PHYSICAL DISCONTENT.

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Among the innumerable incomprehensible things that surround the earthly individual during his comparatively short sojourn here as a slightly intelligent being is the physical as well as the mental unrest and discontent.

Even as the mind of man yearns for a solution of scientific problems of which his limited physical senses give him but a faint and incomplete realization, so the material body turns hither and thither in a seeming vain search for physical content.

An all-wise source of creative power, impelled by a purpose that is not knowable to us, has implanted in our machine-like bodies strange and almost irresistible tendencies that point with absolute certainty toward some ultimate and desirable end.

The discontent of mind that stimulates ambition, the discontent of soul that yearns for explaining knowledge, the discontent of thought that tries to reason out the destiny of the ego of man, all have their prototypes in physical habits of strange import. The physical longing for the effects of alcohol, tobacco and cocaine is as mysterious as it is hellward in its course.

That divine implanted passion of sex, the purpose of which is no doubt to offset the wasteful loss of human life, only intensifies the desire of deep-thinking men to know what is the evident very important end of our presence here. And, strange to state, we drift along joyfully ignorant and unmindful of the great ultimate purpose, selfishly feasting upon the bait that is skillfully placed where it will successfully lead us on. The physical pleasure and satisfaction of sexual intercourse, however, is not of itself sufficient as an impelling reward to maintain the species at a safe level of numerical strength. There exists that strange impelling tendency that drives man to do almost superhuman deeds, to slay his fellow, to destroy his object in his wild desire, and even to destroy himself when his purpose seems hopeless. From the standpoint of human reason these terrible impulses can find no adequate explanation. It is that physical discontent which forces onward the human machine toward the accomplishment of a God-known and yet human unthinkable end.

But the purposeful object of common existence is just as strange. The small boy who asked his mother "Why is a bed bug?" has never yet been satisfactorily informed as to the reason for its existence. The savant who delves into the thin skin of knowledge soon realizes his inability to go deeper. The knowable is merely the faintest hint of an undoubted incomprehensible expanse of fact. The five avenues of receiving knowledge into the human cognizance are strangely and unchangeably limited by an inflexible law. The evidence of design marks the existence of a designer, and yet the knowledge of that Great Designer can only be inferred by us from His works. The so-called subconscious conception is nothing but an unsatisfied hunger after the unknowable. It is hope mis-named fact.

When the poet Longfellow asked his Irish gardener as to his idea of infinite heavenward space the reply was: "The end of space, be dad, is a big stone wall." And when asked what might be found on the other side of the stone wall he replied: "Nothin', be dad!" Foolish as this reply may seem, the wisdom of the ages can give no more satisfactory answer. The vagaries of the sex instinct are as incomprehensible. I know of no way to convey my idea so completely as to speak in a hypothetical way. Turn a fair-sized calf into fenced pasture containing good rich grass, and he will soon tire of the generous supply of food legitimately supplied and wander around in discontent looking for an opportunity to get some of the same kind of grass that is just outside the fence. He will butt against that fence, endeavor to crawl under or jump over, devise many clever schemes to retain the credit of staying in the pasture while he feasts on the grass outside, and yet we can see absolutely no reason for his discontent. So it is with misunderstood man. In the pleasant pasture of conjugal bliss, surrounded by the matrimonial fence, he is not often perfectly satisfied. He peeks through the fence at some plump or gracefully thin blade of grass, and at once is filled with physical discontent. He braves consequences worthy of a better cause, and invents clever schemes that might result in untold happiness if used along other lines, and barters future prospects of all human success, trying to get the few halo-surrounded blades of grass on the outside of that fence. And when he breaks through and gets what he has so strenuously been striving for, what has he got? What is his reward? What follows?

It will be a sad-looking calf. In all probability there will be bruises on its head from clubs, a sorrowful heart from disappointments, and sores all over its body from specific effects on the blood. All the other calves have no difficulty in seeing the misfortune of this calf, yet the foolish ones continue to try with all their might to get through that same fence.

PROPHYLACTIC IMMUNIZING IN ACCIDENTAL INJURIES.

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The advantages of prophylactic immunization in cases of accidental injuries where lacerated tissues have been exposed to infections is not sufficiently appreciated. Every physician is familiar with the difficulties of cleansing the average wound received in a street or shop accident and rendering it aseptic, and how such cases often develop serious infections resulting in more danger and trouble than the original injury itself.

When an infection does take place necessarily not much progress towards repairing the destroyed tissues will be found until the systemic response to the infective process has developed enough antibodies to interfere with the germs. Meantime the germs usually have done enough damage to the tissues involved that direct union becomes impossible and the wound heals by granulation, leaving the injured part feverish, swollen and painful. If the infective process is active the infection will extend to adjacent tissues, resulting in abscess formation, requiring subsequent operative interference.

Fig 1.

After eliminating a possible tetanus infection the probable infecting organisms are the staphylococcus and streptococcus.

Streptococcus wound infections are always serious and should be guarded against under all circumstances. Staphylococcus infections, while more frequent, are not so serious, but always retard the healing process and cause much suffering. In the care of these cases we should realize that the immunizing response from a dose of bacterial vaccine is more pronounced than that resulting from an infected wound, consequently by giving the vaccine just after the injury there is sufficient time for enough immunizing response to develop to prevent the infective process from doing any permanent injury.

A recent case of mine is a good illustration: A man twenty-eight years of age had one hand caught between two rollers used in mixing dough and was held there for fifteen minutes before released. The hand and all the fingers were badly crushed. In the palm of the hand the skin and tissues were crushed and lacerated so badly that all the flexor tendons were exposed. On the back of the hand the skin was crushed through over each of the metacarpal bones. The arterial blood supply to the ring finger was destroyed, the finger being black, showing no circulation.

From the extremely lacerated condition of the hand, cleansing to a point of bringing about an aseptic condition was impossible. At all events, the staphylococci normally in the skin in this mutilated condition were almost certain to develop. From the condition of the hand it was deemed advisable not to stitch the skin, but by partly closing the hand the parts were fairly well approximated and accordingly the hand was dressed in this position with bichloride gauze and bandaged.

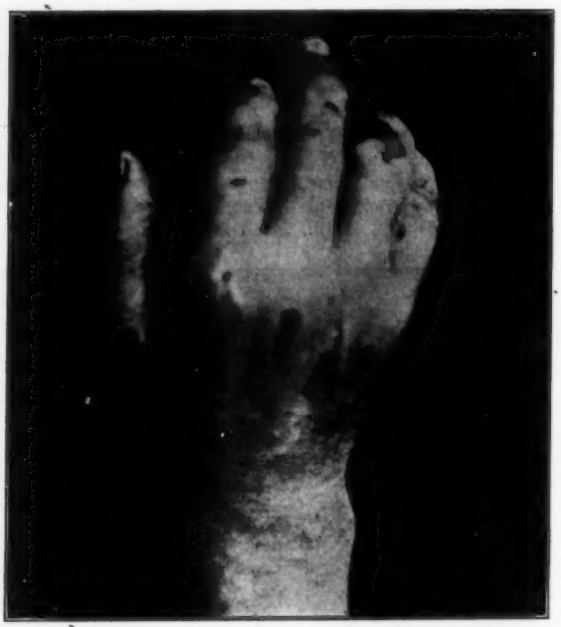

Fig. 2

A dose of streptococcus-staphylococcus combined vaccine containing streptococcus 60,000,000, staphylococcus aureus and albus each 200,000,000 as a prophylactic measure was given at once. The first night the patient suffered very much, and the next day the hand was badly swollen and painful. Towards evening, however, the pain began to diminish and the patient got a good night's rest. The following day the same dose of combined vaccine was repeated. After that the swelling in the hand subsided rapidly and the pain entirely disappeared. On the seventh day another dose of the same vaccine was given. By this time collateral circulation in the ring finger had developed sufficiently to show life in a greater portion of it, but the end of the finger was necrotic.

Photograph 1 will show the condition of the palm of the hand on the twelfth day. It will be observed that there is a

Fig. 3

distinct line of demarcation showing the part of the finger it was necessary to amputate. In the lacerated part of the palm a patch of tissue marked with an X also became necrotic from the crushing and sloughed out. The back of the hand shows the lacerated condition of the skin over the metacarpal bones. On the sixteenth day the finger was amputated as shown in cut 3. Under the immunizing influence of the vaccine there never was more swelling and pain in this hand than what would have taken place had the same mutilated condition obtained under strict aseptic conditions. It is needless to point out what damages an active infection would have done to a hand with such injuries.

What was accomplished in this case no doubt can be repeated in other cases. The procedure of prophylactic immunization with streptococcus-staphylococcus combined vaccine is so easily applied that every case of a probable streptococcus or staphylococcus infection should receive this treatment. The procedure is entirely harmless and every patient is entitled to the advantages that this treatment would give.

Digitalis Action.

Cary Eggleston, New York (*J. A. M. A.*, October 12), has clinically studied the relation of the action of digitalis in a number of cases showing coupled beat, sinus arrhythmia, heart slowing, extrasystoles, heart block, etc., and from an analysis of all the cases he concludes that the elimination of the drug is slow and that after the disappearance of the traceable signs of its action there remains in an active state in the tissues a very large part of the total digitalis absorbed and acting prior to the cessation of its administration. This period of digitalis action, which cannot be definitely shown to exist by means of tracings or even by clinical signs in the majority of patients, may be termed the period of latent action. It is represented by the slowly falling line below the level of obvious action, either therapeutic or toxic, and its duration is of uncertain length. He concludes that the drug is more or less firmly fixed in the tissues, probably of the heart, and continues its action in proportion to the quantity present. The return to action in response to a smaller second dose is the summation of the drug fixed in the tissues and that subsequently introduced. The phenomena of the persistence of digitalis action is due, therefore, not to the lasting effects of an injury to the heart, but to the actual presence of the drug in the tissues in active form. The loosely used term, "culmination," is simply the name given to this summation of the amounts absorbed and fixed when the intake is in excess of elimination.

THE NORMAL POWER TO RESIST DISEASE: HOW TO RETAIN AND INCREASE IT.

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It is disease and not old age that causes death. At least this would seem to be proven when we examine an unlimited number of certificates which give the cause of death. But upon a more careful and thoughtful consideration of the subject, disease as a cause of death is much more apparent than real. Naturally enough there is a strong effort made to minimize the importance of old age as a cause of death in the attempt to emphasize the importance of disease in a community. But it does not require much effort to discover that disease of itself is often not the direct cause of death but only becomes assigned as such because normal resistance to the disease has been lowered by advancing years. To just what extent this is true we cannot state, because it is practically impossible to correctly gauge all of the factors concerned. There is this proposition also to consider; that in spite of the presence of disease, death would not have occurred if the victim of its ravages had been either older or younger. We speak of death first, not because it is so important but because it is least important, for not uncommonly, if we can dismiss sentiment and take the physiologist's viewpoint, dissolution is preferable to a protracted state of ill-health; preferable from every standpoint except that of sentiment .

The most important thing in life is good health and that embraces the power to resist disease successfully. Naturally when we consider a subject of this character there arises in the mind and thoughts the question of disease, and its prevention.

With this situation, sanitarians are chiefly concerned today and splendid advances have been made. Through their efforts many diseases which were commonly epidemic or uncontrolled, are now almost exterminated or are so capable of being kept within bounds that they no longer hold the terrors to the public that they formerly did. Now this splendid work is being carried on in spite of the attitude of the individual toward it, in fact, it proceeds without his support and often without his knowledge and he becomes the direct beneficiary as far as his health and comfort is concerned, of the sacrifices of time, money and lives that noble and public-spirited men and women are constantly making along the lines of sanitary science and hygiene. As a particular environment is commonly shared by a large number of persons, this branch of the work is usually called "public," but we must not be unmindful of the fact that it is just as important as personal hygiene and that the individual should be just as grateful to these impersonal agencies which protect him as he is to some personal advisor on the same or similar questions.

There can be no question but that at the present time, the principal function of sanitary science and hygiene is the prevention of premature death. This is far from being the ideal situation and yet it remains so because of several factors, but of these we need not speak. What I wish to emphasize is this: that the effects of disease are very largely dependent upon the age or the enfeeblement of the patient and that it is these latter factors rather than the disease itself which cause the unfavorable terminations. One of the first things that the careful and experienced physician does when called to see one suffering with disease, is to estimate as nearly as he can the normal resistance of that individual because upon that fact depends much of his treatment and most of his chances for success.

Any physician could recite to you instance after instance in which serious disease has attacked those with splendid resisting powers and it has not caused very much concern as regards the ultimate outcome because the disease was self-limited and the victim well able to fight it, while upon the other hand as many instances could be recited in which the disease itself was in a mild form or of a less serious character and yet an unfavorable outcome could be confidently predicted because the patient had weakened powers of resistance.

Now why do we speak of premature death and disease? Surely it is not because it is an attractive subject nor is it one that appeals strongly to those who are enjoying good health. But it has been necessary to speak of them. It has been necessary to emphasize the fact that their occurrence is often avoidable, their ravages can frequently be resisted successfully and that while they hold a certain dread for most persons, their importance is a minor one to that of the maintenance of normal health and a body that is functioning perfectly.

Let us speak of good health and the normal power to resist disease. We have seen how as individuals we are constantly protected from extrinsic causes of diseases and how this work is going on often without our knowledge. But there is another and a most important factor to be considered and one with which we have most to do; that is, the normal power of the individual to resist disease. Just as soon as we consider the individual's capacity in this regard, we are confronted with the possible influence of heredity. The influence of heredity has been so overstated that its importance has been magnified so that many factors are accepted as being due to hereditary influences which are, in fact, in no way connected with it. If at birth the somatic organization of the child was complete, that would be an end to the matter; we would look for perfectly healthy children from healthy parents and conversely, the parent with disease or bodily weakness would hand down that defective organization to the offspring. But, fortunately this is not true, for while heredity has a place and an important one in its influence upon the development, environment is a far more potent factor in the production of persons with a lowered resistance and acts in divers ways in keeping them so. Heredity is more often given as an "excuse" than as a "reason." It is a very simple process to blame heredity for our own weaknesses or our inability to cope with a situation. While I would not minimize the influence of heredity, the writer is strongly of the opinion that a very large measure of our energy should be devoted to the betterment of prevailing economic and social conditions; that we should live more in the present than in the past and that if this was done, we would to-day be influencing the future.

Even though we give to the influence of heredity an unwarranted importance there still remains the fact that there resides in each individual some factor that aids him in resisting disease. This factor cannot be traced directly to heredity or to environment, but seems to be somewhat independent of either. It is constitutional and it is as yet unexplainable. It may result in a varying resistance to some particular disease or may be more general in its scope. This state of the body of the individual is illustrated in daily life by the observance of individuals, who either consciously or unconsciously expose themselves to conditions which would usually be followed by disease of some sort and yet such persons remain healthy. We consider them immune, but that immunity cannot be traced to an acquired source but is in the individual himself. This factor of resisting disease is utterly beyond our understanding and control. We may be conscious of it in a given individual, but as yet we know of no method of determining its existence before repeated exposures, and

recognizing its presence, we can do nothing that we know directly or indirectly influences it.

But irrespective of this unknowable factor, each individual has within himself a normal resistance to disease and this is aided very materially by his several organs which fight the invasion of any disease, and in fact the latter may be the only ones as they are the chief elements of successful resistance. I need not cite instances of this for each one knows that under certain conditions there are results which show as disturbances in the continuity of normal well-being and each individual can with considerable certainty predict these disturbances, if he persists in a continuance of the conditions which predispose to them. For instance, when tired and overworked, or exhausted with care or worry, one cannot with safety eat as heartily as when conditions are normal. The attempt to do so will almost certainly result in some temporary disturbance of the system which will in some measure at least reduce the normal efficiency of the individual. It is the same thing in regard to catching cold; there are conditions of one's system in which a catarrhal condition will be given the ascendancy and result in a degree of ill health, unless the body is protected more carefully in all its functions than is necessary in good health. And again, if there exist in the individual certain tendencies toward particular disease, more caution is necessary to safeguard that one against that particular invasion than in more normal persons who have no such tendency.

What then is the solution of it all; how are we to retain our normal resistance to disease or increase it if it is not up to the required efficiency? The reader may have already answered: "By keeping every organ of the body in perfect condition." This is right as far as it goes, but it neglects another factor of which we shall speak presently. It is a most desirable thing to have every organ of the body perfect and if such a condition exists the individual is splendidly fortified against the invasion of disease. But perfect organs are not absolutely essential to the continuance of good health or even to the maintenance of the normal resistance to disease. One might have one or more diseased organs in the body and yet be in better health than one who had every organ perfect. And why? Because perfect functioning of an organ is far more important and necessary to life than mere perfection of structure.

Health is a relative term but a state of health demands that there be co-ordination and co-operation of the several parts; that the intricate yet correlated functions of each organ be carried on freely and without pain. For example, you are in perfect health; you are reasonably certain that every organ is perfect. The function of your ears is to hear. Now, for one day, limit that functioning by stopping them with cotton and what will be the result? Although every organ remains normal in structure, you will suffer according to the degree of interference with normal functioning. In this instance your gait will be unsteady, one avenue of education will be cut off and certain reflex actions will occur which will at least temporarily lower your efficiency. Where is the fault? It is in the failure of one organ to act in harmony with the others. Every one of you knows how deaf persons are affected by the conversation of others; they are usually unnecessarily suspicious and this arouses other emotions. Perfect functioning is the essential thing, not structural perfection.

How then shall we retain our normal resistance to disease; shall we in any manner disregard those measures which tend to preserve the organs of the body in perfect structure? By no means. On the other hand we must do everything possible to bring them to the highest point of efficiency for our prolonged needs and keep them there. You will note that I said "at the highest point of efficiency for our prolonged needs" because it is possible and not uncommon to bring them to a higher point of efficiency than necessary and thereby serious damage may be done; athletes commonly do this and soon wear one or more organs out prematurely.

From an experience which has extended over several years the writer is convinced that good health is secured and retained and the normal power to resist disease is maintained and strengthened by physiological living. Physiological living will mean something different for each individual and in the same individual will differ with the several periods of life and in the several periods will be influenced by varying activities. To the baby, physiological living means mostly eating and sleeping; to the older child it means play and unrestrained activities of mind and body; to the young person, it means the acquisition of knowledge and the pursuit of pleasure; to the middle aged, the activities of life, and to the aged, the gradual relinquishing of the former activities. This life must be lived in harmony with personal and individual peculiarities, whether it refers to sleep, to diet, to mental effort or physical accomplishment. No two individuals are exactly alike —what will help one may harm another. It is therefore impossible to lay down anything more than the most general rules. It is far better to individualize. The surest way to retain and increase one's normal power to resist disease is to live one's life in such a manner as will conduce to the harmonious action of all the several organs; to do this consistently and not by spells; to promote a continuance of perfect functioning of each organ and to do all of this rather as a result of habit than of mental effort. To do this successfully requires personal experience and that in turn must be analyzed by judgment and sometimes by the experiences of others. The further we are able to get away from the restraining influence of set rules and the nearer we get to a correct estimation of our own capabilities and needs; in a word, the more we know of ourselves and the less we try to force our own peculiarities upon others, the more certain we are to resist disease.

One thing is certain: any scheme that aims to improve the normal resistance of young people is doomed to certain failure unless it is based upon the physiological fact that the pursuit of pleasure is a perfectly normal and commendable attribute of this period of life. And pleasure is not a question of minutes or hours, it must be adapted to individual needs.

Uterovaginal Prolapse.

G. B. Somers, San Francisco (*J. A. M. A.*), speaks of the differences of opinion and method that exist among surgeons in regard to the operation of choice in uterovaginal prolapse occurring after the menopause. He restates his views formerly expressed and describes the technic he has followed in accordance with them. In conclusion he says that he believes that a careful consideration of the conditions involved in the operation for prolapse of the uterus will lead to the acceptance of the following propositions: "(1) It is better to preserve the uterus than to remove it. (2) The cystocele complicating prolapse of the uterus is most effectively treated by reinforcing the anterior vaginal wall. (3) Interposition or vaginofixation best answers the requirements of the operation. In regard to the technic of interposition I believe that, where the operation is applied to severe cases of prolapse, success depends largely on the following points: (1) amputation of the portio vaginalis; (2) transposition of the cervical stump high in the vault; (3) support of the stump by shortened sacro-uterine ligaments; (4) functional restoration of the perineum."

Töpfer has produced glycosuria in dogs by injecting into the small intestine a portion of the intestinal contents from a diabetic subject.

CRIME AND ITS REMEDY.*

By Lady Cook, nee Tennessee C. Claflin.

Crime has been loosely defined as an offence punishable by law, but there may be crimes of which the law has no cognizance. Laws are of many kinds—natural, political, civil, domestic, and so on. As Montesquieu says: "The sublimity of human reason consists in perfectly knowing to which of those orders the things that are to be determined ought to have a principal relation, and not to throw into confusion those principles which should govern mankind. For instance, we ought not to decide by divine laws what should be decided by human laws, nor determine by human what should be determined by divine laws. These two sorts of laws differ in their origin, in their object, and in their nature." All laws should be protective, even when punitive, and all just law has one of two designs—the protection of the community or the protection of the individual. Yet these form but one ultimate object—the protection of all. So that it would be a paralogism to assert that the good of the individual ought to give way to that of the public, for "the public good consists in every one having that property which was given him by the civil laws, invariably preserved." Also the duty to one's self is stronger than the duty to the community. And as the law of nature is superior to all human laws, so "self-defence is duty superior to every precept." If we were to pursue the subject, we should find that laws have been sometimes more criminal than the offences against which they were directed; that they have been frequently used to manufacture crime in those who have neither injured the individual nor the community; that even beneficent actions have been treated as public offences, and that public offences and private injuries of the gravest character have been completely overlooked. The field, however, is so wide that we can only glance at it as we pass on.

Imaginary offences, as sorcery and witchcraft, have been treated as crimes; scientific discoveries and mechanical arts have met with the same fate; the opinions of the minority have always been heterodox, and heterodoxy has invariably been punished in some form or another. Men and women were burnt alive for their harmless theological beliefs, when thieves and murderers were only branded. So that we cannot always judge of the good or evil of a thing, or even of its magnitude, by calling it crime or no crime. It is true that we do not burn a man now for his belief. We only ostracize him. If the process should ruin him, so much the worse for the man, but why could he not learn to believe like ourselves?

In the limited space of this paper my reflections must be narrowed to a point or two. I shall briefly call attention to conduct that constitutes a crime against society and against individuals, although it is not to be found in our statutes.

If to poison one person be an infamous crime—and no one questions it—what shall be said of him who poisons a multitude, who entails untold sufferings upon innocent and defenceless generations who for his own wanton gratification gives life to another whom he knows will be cursed with hereditary disease and premature death? If we were not so blinded as we are by customs and selfishness we should regard such an one as a monster of depravity. Daily we see those in whose blood some horrible disease lurks marry and multiply with light hearts and easy consciences. Friends and relations look on approvingly. Reverends and Right Reverends give their benedictions. Remonstrate, and they answer that they leave it all to Providence, as though blasphemy could excuse premeditated guilt. Do they expect to gather grapes from thorns and figs from thistles? Were society wise, it would minimize crime of this nature.

For what peril to posterity can be greater than thus to poison the river of life at its source? What other crime can equal this wholesale dissemination of well-nigh ineradicable disease among the countless sufferers who follow after, to whom the gift of life comes as a curse dowered with evil. Minds and bodies that should have been radiant with joy and beauty are befouled, deformed, blasted, dragged down to unutterable depths of misery and agony. Existence, which comes to each but once, for these had better never come at all. We picture them, like one of old, loathsome, ulcerated without and within, sitting in the ashes of all their spiritual aspirations and human hopes, and we, too, are almost tempted to exclaim, "It is better to curse God and die."

In the presence of such a crime, so common and widespread, how can we be silent? The laws are silent. Our moral and religious teachers are as "dumb dogs." Society, with its cant and hypocrisy, turns up its eyes in pious terror at the mere mention of the subject. As though it could be indelicate to diagnose any form of disease, or one more than another; or as if no depravity should be remedially discussed if it happen to be sexual. But if we remember that the sect of the Pharisees is not extinct, we also bear in mind that in all ages there have been fearless teachers who refused to hide the truth, and humbly following in their steps we have dared to "cry aloud and spare not."

An excellent writer long ago said, "Truth is, in everything, not only the shortest, but the only road to excellence—the only foundation on which everything permanent can ever be raised, and all ways of evading, slighting, or opposing it are, in fact, only loss of time and hindrance of business in the affairs of men."

The marriages of the physically unfit form only a part of the wedded evil. Loveless marriages are answerable for much It is with us now as it was in France before the Revolution. "Persons of the rank of nobles were found vile enough to accept in marriage, and to bestow the name of wife on those whose conduct, as well as birth, would otherwise have denied them an entrance into society. Sometimes the same disgraceful bargain was made with those of their own rank, who found a more honorable establishment difficult. The husband sacrificing at once his honor and his rights at the church door, was sent to eat the wages of his base compliance in a distant provincial town. Here his title and his money soon procured him the good graces of some provincial beauty, who consoled him for the contempt with which he had been treated elsewhere, and whose husband imitated his own example of forbearance and submission. The sacrifice of youth and beauty was often made, and made without remonstrance, to deformity, to age, and, even to imbecility, among persons equal in birth, when one of the parties had to offer the wealth or brilliant existence in society which was wanting to the other."*

We are cheated by words, for these unnatural unions are not marriages. True marriage is a spiritual and mental exosmose and endosmose; each gives of its own to each until both are alike. It is a natural and spontaneous union of ideas, aims, and sympathies. And where these exist rites and ceremonies are superfluous. They can neither give nor take away. For the marriage ceremony is not marriage, but it is merely the public profession of an accomplished fact, otherwise it is morally fraudulent. And if marriage does not precede the ceremony, no real marriage exists.

It is because we attach to the word what rightly belongs to the thing, that an act of nature is stigmatized as a crime.

When women prompted by their own affectionate and generous instincts and regardless of ceremonies have become mothers our social Juggernaut crushes them remorselessly. It brands them as outcasts, and thus they hang, drown, or prostitute themselves. Holocausts of little ones, innocent as those of Bethlehem, are annually sacrificed to the fear of this wooden

*The Editor of Madame du Deffaud's Letters, 1828.

*The brilliant author of this paper spake before her time as a prophetess, for many of the sentiments expressed herein have been enacted into laws and others will eventually become parts of our statutes. This article was sent to a member of our editorial staff more than ten years ago and we are unable to learn whether or not it has been published elsewhere. At the risk of repetition we venture to print it, in view of its prophetic utterances, which are so in keeping with the present trend toward a more perfect comprehension of eugenics and the demand for sterilization of criminals and the hopelessly unfit.—*Editor.*

God. What, say you, would you permit "natural" children among us? Most certainly. All children are natural except the offspring of enforced and unnatural marriages.

It is evident to all observers that the prudent and wise are cautious in the exercise of their creative powers, whereas the least fit are the most reckless of consequences. Their criminal folly is thus perpetuated as well as its evils. Who then, it may be asked, shall judge as to fitness? We reply that a jury of matrons could, on examination, easily decide as to the man's general capacity for marriage. If it be said that the unrestricted association of the sexes would increase immorality, we deny it and affirm the contrary. Doctors, for instance; are not more immoral than others, yet they are brought into much closer intimacy with their female patients. These things are regulated by habit and self-respect.

It is sheer childishness to shut our eyes to facts or to ignore the brutal profligacy in our midst. Mirandas encounter Calibans at every street corner. Nor is it as in the classic woods of Greece, where impure Satyrs watched furtively from behind their leafy coverts for a rarely passing nymph. Our modern Satyrs are elegantly dressed, and leer openly at every pretty woman in our public places.

Nature sterilizes women of immoral lives. Immoral men should be sterilized also, but this can only be done by artificial means. Jesus said, "Some are born eunuchs, some are made eunuchs, and others have become eunuchs for the kingdom of Heaven's sake." The saintly Origen emasculated himself. What has been done from religious, luxury, or choice, may be done again from necessity. It might easily be made a physical impossibility for criminals, hereditary paupers, imbeciles, profligates, and others suffering from gross bodily or mental defects to propagate their failings and their vices.

The scientific improvement of our race is one of the great measures of the future, and will be taken in hand as soon as the nation is sufficiently enlightened as to its necessity. We cannot go on for ever permitting swarms of weak and depraved creatures to flood society with lunatics, idiots, criminals, and other defective offspring. Their maintenance and control alone constitute a serious menace to the welfare of the industrious and deserving poor. Their contagious and vicious example outweighs the efforts of missionaries and reformers, who are, as it were, for ever rolling a Sisyphean stone. We banish or isolate physical leprosy, and thus extirpate it. Moral leprosy may have to be subjected to similar treatment.

The Spartans afforded a remarkable instance of what could be done by selection, careful breeding, and systematic education. A little state of a few thousand citizens overawed Greece and defied the countless hosts of Persia. Marathon, Salamis, and Plataea ring out clear and spirit-stirring after the lapse of twenty-four centuries.

The early Romans retained much of the Lacedaemonians' spirit. They took especial pains to preserve purity of blood. When Cato lent his wife to Hortensius, it was from no immoral motive, but from a high sense of public duty. Hortensius was a "goodly man," his physical and mental excellencies were appreciated by his friend, and therefore he selected him as his deputy to raise up children to the State. And Cato is esteemed a model citizen and patriot. One of the greatest punishments inflicted on the Romans was the withdrawal of the privilege of lending their wives.

Spartan and Roman requirements differed from ours, and thus our methods must differ also from theirs. We should, however, pursue the same object—the mental and physical perfection of our race—by means suitable to our time and place. Marriage should be resolutely discouraged where the parties are unfit through any disqualification. Where a community has taken upon itself the burden of the support of all, it should have the power of regulating the action of individuals in so far as they create the difficulty. We prevent the inmates of our prisons, workhouses, and asylums from sexual intercourse. We even separate the married. What should hinder us from carrying out the principle farther, and to its full logical extent.

A man imbued with these ideas would no more think of marrying a woman of defective physique or one possessing hereditary taint, than he would of purchasing a broken-winded racer to run in the Derby. However fair she might be, he would institute a careful inquiry into her family history before proposing. And a woman would do the same. She would decline to become the mother of a line of puny and dyspeptic weaklings. Fathers would mate their daughters at least as carefully as they mate their dogs and horses. And the State would make it a serious crime for an unhealthy parent to produce a child. A license to marry should be given by a Medical Board, and not by a priest. Marriage then would be a sacred privilege; it would be highly valued, and so held in much honor; it would be a mark of the worthiest, and would conduce to general emulation in worth. In a word, it would be a reign of the fit, instead, as now, of the unfit. Society would stamp out disease and crime, as it has stamped out the rinderpest. Under such conditions what a glorious country would this be?

EUTHENASIA UP TO DATE.

Euthenasia has been advocated by some advanced thinkers as necessary to the welfare of mankind, but until the beliefs of the majority radically change, we shall doubtless allow our chronic invalids and our aged to die natural deaths.

There are, however, people on American soil who do not possess our finer feelings in this connection. In the Arctic regions the hopelessly ill and helplessly aged among the Indians are either strangled or clubbed to death, although the inroads of civilization have caused some of the more enlightened of the tribes to kill their excess population by leaving them in a deserted hut to starve or freeze to death.

In case the helpless ones dwell on the sea coast, they are placed upon a cake of ice and good-by is waved to them as they float out to a watery doom. The deeply rooted, superstition of the native Indians debars the sick and aged from dying in the house, to which they would by so doing bring bad luck, hence they are put out of doors as dissolution approaches. According to a recent investigator into this subject, some mining prospectors from the United States, while lost in the Alaska mountains, found in a rude shelter an old Indian man and woman who had been left behind to die when their tribe went down to the coast for the winter. The miners gave the old people all the food they could spare, and gathering them a large supply of firewood left them to their fate. Later it was learned that when the tribe went back to the mountains for the summer hunting they found the old people still alive. They were fed through the summer while game was plentiful, and then abandoned anew the next winter, which, being unusually severe, finished them.

Another winter some fur traders came upon a helpless old man, left behind in a wretched shack by his migrating tribe, but with him was a young man for company. The watcher was impatient to be off and bewailed the indecent tenacity of life displayed by the old man, whom he would neither feed nor tend, yet whom he would not desert while life remained nor help out of the world with a club, since he had been taught by a missionary that such things were not done in really good society.

A government official who was establishing schools near the Arctic Circle reported the hasty taking off of a helpless old woman by a method common among the fishermen of that country. The descendants and friends gathered at a feast, at the close of which the proud old lady, dressed in her best clothes, was brought out and set up in their midst, and, after bidding them an affectionate farewell, was deftly strangled with a stout cord in the hands of her sons-in-law.

SOME SHORT CUTS IN DIAGNOSTIC TECHNIC.

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Ignorance on the part of the physician as to the value and limitations to the interpretation of a test, rather than the actual shortcomings of the test is the chief reason why he often fails to get good results from the use of his laboratory aids.

As bacteriological evidence is of chief value when positive, so is chemical evidence of chief value when negative. In other words, the finding of gonococci in the urethral smear or diphtheria bacilli in the pharyngeal exudate prove the presence of the respective diseases. In case we fail to find these germs, there exists a question as to the diagnosis. But a positive chemical test, upon the other hand, rarely determines the final diagnosis. While we usually find albumen in Bright's disease and lactic acid in cancer of the stomach, both may be met in other conditions.

Does it follow, therefore, that the evidences derived from clinical chemistry are of no value and cannot be applied by the physician in diagnosis? No, indeed! Often the finding of albumen in the urine may lead the physician to strongly suspect the presence of Bright's disease, or the finding of lactic acid along with other features may lead him to accurately diagnosticate carcinoma ventriculi.

But it is the *negative* chemical reaction which is of the most value. A urine which, upon repeated tests, fails to show serum albumen, probably is not secreted by an inflamed kidney, and the physician is thus spurred to search further for the cause of the trouble.

With these limitations held in mind we have recourse to a host of valuable short cuts when approaching a case difficult of diagnosis. For example, here is a patient with a fever probably caused by the typhoid bacillus; but the Widal reaction is as yet negative, and a diagnosis cannot be made without further evidence. Holding in mind this patient, let us consider for a moment the chemical urinary test devised by M. Russo. This is a simple little reaction which may be applied by any physician with a test tube, some methylene blue and two minutes time; and the technic of which is repeated so frequently in current medical literature that I have not thought best to give it space here. The lazy physician hoped that the positive reaction would enable him to diagnosticate all of his cases without having to study his patients, and as soon as he was disappointed, he condemned the test in no uncertain language. It is not to be denied that the positive reaction is found elsewhere besides enteric fever; but recalling that it is the negative reaction in clinical chemistry which aids us most, suppose we apply it to the patient mentioned above, hoping that it may serve as a short cut.

The test is negative. What is our conclusion? If this patient has a fever, this is probably not caused by the typhoid bacillus, and we may as well set about searching elsewhere for the cause of the trouble. Of course such a presumption is hardly fair unless the test is repeated at frequent intervals. I have seen this test in its negative phase direct the physician to an abscess of the gall bladder, and in another instance to a pyelitis.

Now and then we see men who are considered as authorities in diagnosis, censure a test because its positive reaction does not prove to be specific of a certain disease. I speak with special reference to the methylene blue test of the urine for malignant growths of the viscera as proposed by Fiehs and Lintz. Soon after this report, certain observers finding that the reaction occurred in other conditions, concluded that the test was of no diagnostic value whatsoever. These men are recognized as level-headed diagnosticians, and their observations and conclusions were published in one of our leading and most conservative medical periodicals (which is strange if we recall that outside the proof that glucose persistently occurring in a urine classifies it as diabetogenous, very few tests in clinical chemistry are specific of diseases).

But in the light of our observations to date, it seems that if internal cancer is present, the Fiehs and Lintz test is invariably positive. Ignoring the subject of diagnosis, let us consider the prognostic value of such a test. Suppose the reader is ill and applies this test to his own urine and it proves negative. He is practically assured, at least so far as our observations have shown (this is a relatively new test) that he does not have an internal cancer. Is not this test, therefore, of value? Are such condemnations as I have mentioned above, exactly fair?

This leads to a consideration of the albumen test in sputum. Unfortunately the men who propose these tests invariably attribute to them a pathognomonic significance. When this is proven incorrect (as indeed it always is) the pendulum of opinion swings to the opposite direction, and the test, not answering to the first unfair demands, is doomed to the scrap heap. No, the positive albumen test does not signify tuberculosis of the lungs in every instance any more than does albumen in the urine invariably bespeak Bright's disease. But it *does* indicate a serious pathological process; and its absence when persistent, directs the physician to other fields for inquiry.

There are many other short cuts to diagnosis in the realm of clinical chemistry; and the physician who omits these makes his load heavier and loses much precious time. I have omitted technic in order to emphasize the limitations and value of these three short cuts.

SMALLPOX—VACCINATION—QUARANTINE.

R. L. Dixon, M. D.,
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Lansing, Mich.

How many cases of smallpox will there be in Michigan during the next six months? I do not know. I do know that there will not be a case of smallpox in my family, although I may go directly home after having visited virulent cases of the disease. What is more, as far as my family is concerned, no person who is unfortunate enough to have smallpox needs to be quarantined. *If a tramp covered with smallpox pustules happens to call at my house, the fact that he has smallpox is of less concern to my family than the fact that he may have itch or even a tapeworm.* In securing to my family this protection against smallpox there is no sacrifice of life or limb, and little, if any, inconvenience incurred.

The physicians and health officers who visit smallpox cases do not take all of the precautions so commonly practiced because they are afraid of contracting the disease, or of carrying it home to their families, but to *protect the unvaccinated.* Physicians who ordinarily charge two dollars for visiting a case of typhoid fever are frequently paid ten dollars by the county for visiting a case of smallpox. Is this difference in fee because the latter case requires higher degree of skill and knowledge in treatment? Ask the physician. It is based more upon the necessity, on the part of the physician, to do a lot of extra work in order to protect the unvaccinated, which in no way benefits the patient.

An epidemic of smallpox in a locality always brings a big item of expense upon the municipality and the county. Ninety per cent. of this expense is incurred, not in the interest of the patient, but to protect the unvaccinated. Would it not be a good plan, when smallpox develops in a town, to quarantine the unvaccinated at their own expense and relieve them from quarantine only after a successful vaccination?

Quarantine regulations effect very little in controlling an epidemic of smallpox. Our Michigan epidemics have been checked only after a very general vaccination of the people in the vicinity has been accomplished.

Some States have abandoned quarantine requirements in

relation to smallpox on the ground that it is not effective in preventing or controlling epidemics, and that the expense is far out of all proportion to the good accomplished.

It is our sentiment that the person who contracts typhoid fever as a consequence of drinking city water contaminated by city sewage should be cared for at city expense regardless of his financial rating, and that the person who contracts smallpox as a consequence of neglect or refusal to be vaccinated should have to hustle for his own support.

NEW YORK DIVISION, MEDICAL RESERVE CORPS.

The New York Division of the Medical Reserve Corps of the United States Army, was formed at the Army and Navy Club, New York, on November 7th. About 45 of the 108 members of the corps in New York were present.

Dr. Harold Hays introduced Col. L. Mervin Maus, Medical Corps, U. S. Army, the Chief Surgeon of the Eastern Division, as the presiding officer. He was instrumental in instituting the Illinois Division in Chicago and has taken a deep interest in the Corps. After the preliminaries had been disposed of Col. Maus delivered an address on "The Origin, Development and Purposes of the Medical Reserve Corps of the United States Army," in which he said in part:

The Medical Reserve Corps was created by an act of Congress March 24, 1908, partly to assist the regular medical corps in times of peace and partly to create a body of trained reserve medical officers in time of war. The employment of civil physicians as army surgeons dates back many years before the Civil War of 1861-1865, under the title of acting assistant or contract surgeon.

The acting assistant or contract surgeon occupied an anomalous position in the military hierarchy, which was both unsatisfactory to the incumbent and the officers of the regular corps. In many respects he was called upon to perform the duties of the commissioned medical officer, but was given no military rank or authority. Although amenable to court martial he was not permitted previous to May, 1898, to wear a uniform, sword, sit on military boards or receive a salute from the enlisted men.

The commission of the medical reserve officer gives him the rank of first lieutenant and confers all the rights and privileges of the commissioned grade in the regular army, in time of active service, except promotion. He becomes subject to laws, regulations and orders for the government of the army when in active service, is not entitled to retirement but to a pension in case of disability received in the line of duty.

Officers of the Medical Reserve Corps, when placed on active duty, are expected to perform the duty required of officers of the regular corps. During actual warfare the younger members of the corps will be assigned to active duty with troops in the field, while the older officers will serve as members of scientific and examining boards, recruiting officers, on hospital ships and trains, at large base hospitals and convalescent camps, and as locum tenens at military stations, whose medical staff has been ordered to the front.

It is believed that the Medical Reserve Corps is in the infancy of its usefulness and power, and it is hoped that it will be expanded until its membership has representatives in every city, town and community throughout the country, where suitable and qualified members of the profession are found. The Reserve Corps would prove especially useful should the War Department transfer the recruitment of the army to the medical corps, which is within the realms of the future. With a widely distributed corps of reserve medical officers, the remotest towns and villages of the country could be reached and the ranks of the army filled with the flower of American chivalry, instead of the many undesirables secured from the slum districts of our large cities.

Now that the dental corps has become a part of the regular army and its services deemed necessary, it is hoped that a reserve dental corps will be created, and that the rank and pay of the regular dental surgeons be made commensurate with the important duty they perform. It is believed that the dental surgeons should be given the rank and pay of the Chaplains Corps at least.

The rank of the medical reserve officer will not prove satisfactory should they be mobilized in time of war. The present bill should be amended so that they would reach the lower rank of the field officer. This could be arranged on a scale of service which would enable him to reach the successive grades on length of service after passing an examination prescribed by the War Department.

The Government should prescribe a regular course of instruction for the medical reserve officer and afford him the opportunity of attending camps of instruction and maneuver campaigns. Instruction could be arranged partly by correspondence and partly through instruction imparted by medical officers in the regular army who are conveniently located for such purposes in each State.

The organization of a National Association of the Medical Reserve Corps would be the means of developing its usefulness. It would not only lend interest to its members but would assist in working out plans for the betterment of the corps, and securing Congressional appropriations for the care of the sick and wounded in time of war. A flourishing division should be established in every State of the Union.

The following officers were nominated for 1913: First Lieutenant Henry Clark Coe, president; First Lieutenant Thomas Darlington, vice-president; First Lieutenant Harold Hays, secretary; First Lieutenant H. Sheridan Baketel, treasurer; First Lieutenants Arnold Knapp, Howard Lilienthal, Clarence A. McWilliams, Eugene H. Pool and J. B. Rae, councilors.

The next meeting will be held at Fort Jay, Governor's Island, early in December, with Colonel Maus as host.

Intestinal Antisepsis.

After a general discussion of the principal literature of the subject, N. M. Harris, Chicago (*J. A. M. A.*, October 12), reports his own work, undertaken with the object of testing the combined values of methods and drugs in the doubtful field of intestinal antisepsis. He says that to generalize seriously from the very small number of these experiments would be unwise, but so many favorable reports on drug action are based on really small falls in percentage relationship that he cannot help pointing out what Strassberger did not frankly emphasize—the great variation which occurs in different counts in the same individual. He believes that moderate falls in percentage relationship may indicate only variations within the normal and that we should be very conservative in conclusions as to the effectiveness of any drug. Moreover, we cannot say what organisms are killed off, whether saprophytes from the small bowel or parasites from the cecum or colon, indologenous or non-indologenous. We need a method which, aside from giving us figures, can tell us what organisms we have to deal with, what their biochemical processes are and how this or that drug is acting in reducing both numbers and species and in what location of the tract reduction is effected. Such information can be had only from the application of modern ideas of biochemistry and pharmacy in conjunction with present-day bacteriologic knowledge and technic, and future progress will have to be obtained along these lines. When we have an agent that acts particularly on the large bowel and reduces the millions to hundreds of thousands and the hundreds of thousands to hundreds we can begin to talk of the value of this or that form of intestinal medication. With present evidence we can agree with Friedenwald and Leitz, that "regulations of diet, together with the evacuation of the bowels, is the most effective method we have at hand.

Current Orientation

SCARLET FEVER.

Progress in the etiology of disease has been most marked, but it has not extended particularly to scarlet fever. David Bovaird, Jr., in his new work on internal medicine, succinctly sums up the whole situation regarding this disease in two lines: "The germ of scarlet fever is still unknown. The streptococcus pyogenes is the bacterium usually found in the severe throat and ear complications."

We must content ourselves with the knowledge that the streptococcus is secondary to the definite but unknown causative bacillus, which, Flexner says, is so minute that it has not been located. Laboratory workers are deeply interested in defining the germ, and we may expect success to crown their labors at no distant date.

While the search is continuing much work is being done in obtaining a more comprehensive knowledge of the disease. In scarlet fever we know from the studies of Foix and Mallein that there are specific complement-deviating anti-bodies for streptococci. They used a polyvalent antigen of streptococci cultivated from numerous cases of scarlatinal angina. They obtained deviation of the complement ten times in the serums of twelve scarlet fever patients. Controls made with serums of other streptococcus infections showed complete hemolysis.

Liverato (*Cent. f. Bact.*, LIV, 422) obtained complete inhibition of hemolysis from the use of streptococcus extract after examining eighteen scarlatinal serums, using as an antigen extracts of streptococci, staphylococci, pneumococci, and typhus, colon and influenza bacilli.

The investigations of other men, including Schleissner of Germany and our own Kolmer, unmistakably demonstrate that the serum of scarlatinal patients contains antibodies for the streptococcus.

In November, 1911, Döhle described certain bodies found in the cytoplasm of the polymorphonuclear leucocytes in blood smears from thirty cases of scarlet fever. Kolmer (*Am. Jour. Dis. Child.*, January, 1912) investigated the nature of these bodies for the purpose of determining their diagnostic value. To this end he searched for them not only in the blood of scarlet fever patients, but also in diphtheria, serum sickness, measles and various other diseases of infectious origin. The inclusion bodies are characteristically found in the protoplasm of the polymorphonuclear leucocytes near the margin of the cell and without connection with the nucleus. They have no fixed form, but ordinarily occur as rods or cocci. They are most abundant before the sixth day of the disease; they are rare after that. They stain readily with the ordinary blood stains, but not with hæmatoxylin and eosin. Differential staining led Kolmer to conclude that the "bodies" contained no chromatin and were not protozoa. "They are probably composed of plastin, represent a degenerative process of the cytoplasm and are probably composed of spongioplasm."

Among other conclusions was the fact that they were found in 94 per cent. of the scarlet fever cases during the first three days of the disease. They then began to diminish so that by the ninth day they were rarely found. In diphtheria they occurred in 42 per cent. of the cases of three days', or less, duration. After the three days they were seldom seen. "Inclusion bodies" were found in streptococcic infections as well as in scarlet fever. Their diagnostic value is limited, but, as they were not found in "serum sickness" their presence differentiates that affection from scarlet fever. The "bodies" were also absent in measles and rötheln.

A careful searcher after scarlatinal knowledge is Koessler of Rush Medical College, who has spent much time in the study of this subject. He believes (*J. A. M. A.*, October 26, 1912) that in searching for an antibody in a disease the causative agent of which is still an unsolved mystery such organs should be used as antigen which are both clinically and anatomically involved. In scarlet fever the lymph-nodes were chosen by Koessler, who decided that (1) the organs must come from an acute toxic case of scarlet fever in which the patient succumbed rapidly and without secondary reaction and complications; (2) the blood of the patient examined in the last stage before death should contain no streptococci; (3) the blood serum ought, further, on being tested with an active scarlatinal streptococcal emulsion, to show no deviation of the complement and the activity of the streptococcus antigen used should be tested with the corresponding immune serum; (4) the extracts must show by culture experiments that they contain no streptococci; (5) the watery organ extract tested with antistreptococcus immune serum should show no deviation of complement.

Finding three cases which met all the requirements, Koessler employed only inactivated serums which were obtained on the day of the experiment. As amboceptor the serum of rabbits immunized against sheep's blood was used. Besides the normal serums, serums of measles, diphtheria, erysipelas, malignant tumor, tuberculosis and nephritis were used as controls. None of these control serums prevented hemolysis with the extracts. In 118 cases of scarlet fever the serums were tested for antibodies against the extract described, eighty-one, or 68.6 per cent., showing a complete binding of complement. Of the serums from cases of scarlatinal nephritis examined, every one gave a positive reaction. Koessler noted that these antibodies do not seem to be present in the blood in demonstrable quantities before the onset of the second week. The serum was fonnd to be active in the twelfth week and in one case of scarlatinal nephritis even in the sixteenth week. The following conclusions were suggested to Koessler by the results obtained:

1. The serum of scarlet fever patients contains specific antibodies for an unknown virus.

2. This unknown virus seems to be present especially in the cervical lymph-nodes.

These conclusions lead necessarily to the inference that the streptococcus is to be discarded as the etiologic factor of scarlet fever.

Another evidence of the careful study of the etiology and treatment of scarlet fever is evidenced by a long paper by Kirsch (*Zeit. f. Kind.*, February, 1912) entitled "Disturbances of the Functions of the Blood and Lymph Systems in the Skin as the Result of Scarlet Fever; Relationship of Scarlatinal Nephritis and Œdema of the Skin."

As reviewed in the *Journal of Cutaneous Diseases*, New York.)

Kirsch gives an exhaustive discussion of the functions of the skin, the various stages of the scarlatinal manifestations, the anatomical relationship of the blood vessels to the disease, their reactions, the connection of the nervous system with the skin eruption and finally, the angioneuroses.

His general conclusions are: 1. There is a high-grade inflammatory dilatation of the arterial capillaries of the skin (probably also of the venous and lymph systems) at the height of the scarlatinal eruptions, which shows that the power of the capillaries to contract is greatly reduced. 2. The fading of the eruption which appears in the course of convalescence is an expression of the return of this power of contraction to the arterial capillaries (probably also to the venous and lymph vessels). At the close of this period of fading there occurs an excessive narrowing of certain vessels. 3. This excessive contraction of the arterial capillaries indicates that the pallor of the convalescent period is not only a light grade of anæmia, but is also of a pseudo-anæmic nature and is dependent upon a contraction of the arterial network in the skin. 4. The meshes in the vascular network, which are widened in the height of the exanthem and narrowed as the result of the inflammation, now relax and stretch in this period of paleness. The tension causes a narrowing of the vessels until, as a result, there appear various sized livid spots (pseudo-anæmia). The contraction of the veins in the skin makes them unusually conspicuous and leads, in certain cases, to the appearance of a peripheral venous cyanosis. The contracted veins are visible in certain places even to the origin of the venous precapillaries and the capillaries. 5. This contraction of the arterial skin

capillaries, dependent upon the accompanying disappearance of the exanthem, oftentimes provokes the manifestations of "post-eruptional hæmorrhages," whose origin agrees with that of the so-called purpura. Presumably stasis occurs in the venous capillaries simultaneously with the contraction of the arterial capillaries. 6. The skin, convalescent from scarlet fever, shows vasomotor disturbances (tendency to erythema). 7. The scarlatinal nephritis of the higher grade comes from the interference with the blood vessels in the skin, the œdema from interference with the lymph system (which is caused by a spastic narrowing of the lymph capillaries). 8. The weakening of the power of contraction in the arteries, veins and lymph capillaries is probably due to an anatomical injury of the muscles of the vessels, analogous to affections of the muscular capillary elements. 9. The eruptions of other infections, for example, the rush of variola and likewise the universal erythema which follows the mental intoxications, often produce nephritis and œdema of the skin associated with disturbances of the lymph vessels, analogous to those in scarlet fever. 10. Since the injury to the skin capillaries underlies the secondary angioneurotic conditions of the skin during the convalescent period of scarlet fever, the assumption attains probability that many diseases of apparently neurotic origin, such as angioneuroses, are, in reality, manifold complexes of vasomotor symptoms, symptoms of neurosis, arteriosclerosis, in reality, "angiogen."

The classical symptoms and diagnostic signs of scarlet fever are always of interest. Bell of Cincinnati (*Am. Jour. Med. Sci.*, November, 1912) classifies these points in 315 cases observed at Cincinnati Hospital: Onset with vomiting, 50 per cent.; onset with headache, 4 per cent.; onset with sore throat, 65 per cent.; eruption, whole body, 46 per cent.; eruption, partial, 35 per cent.; mouth pallor, 57 per cent.; rash on soft palate, 38.6 per cent.; membrane on tonsils, 29 per cent.; papillæ enlarged, 56 per cent.; glazed tongue, 17.7 per cent.; anterior cervical glands enlarged, 95 per cent.; submaxillary glands enlarged, 72 per cent.; eruption gone from body, 5½ days; desquamation began in 6¾ days; blood count, leucocytes average, 17,000; polymorphonuclears, average, 78 per cent.; large lymphocytes, average, 6.3 per cent.; small lymphocytes, average, 10.1 per cent.; eosinophiles, average, 2 per cent.; albumin, 11 per cent.; granular casts, 4 per cent.; hyaline casts, 2.5 per cent.; blood cells, 4 per cent.; myocarditis, 6 per cent.; irregular heart, 3 per cent.; murmurs, 8 per cent.; mastoiditis (no facial palsy in this series), 1 per cent.; arthralgia (all cases had immunizing doses of diphtheria antitoxin), 6 per cent.; acetone, 49.5 per cent.; diacetic acid, 22.6 per cent.; indican, 73 per cent.; temperature gone in 5⅔ days; nephritis, 2 per cent. The average white count of cases which died was 17,262. Preponderance of the staphylococcus may have influenced all leucocyte counts,

Concerning the above summary a few comments seem pertinent. Onset with vomiting in only 50 per cent. of the cases is rather disappointing, as so much stress has always been laid upon this sign. Mouth pallor was observed in 57 per cent., which is also lower than one would expect. It occurs constantly in moderately severe cases. It has been our experience that the rash occurs on the face in only a small number of the cases, but when this is present, or if there is only a febrile blush upon the cheeks, the skin around the mouth and nose remains exempt. Thirty-eight and six-tenths per cent. had rashes upon the soft palate and fauces, and where this is present, namely, a generalized blush, punctate in character, Bell believes it to be our most important diagnostic sign.

The papillæ appeared enlarged in 56 per cent.. Concerning this McCullom says that the condition is constant, but may be missed at times, and Welch and Schamberg say that it may or may not be present in mild cases. When present, even with the glazed tongue (17.7 per cent.), it is not absolutely pathognomonic, as it may occur in certain forms of gastro-intestinal troubles, quite foreign to scarlet fever. Bell believes, however, that the strawberry tongue, the generalized blush, punctate in character, upon soft palate and fauces, are almost certain diagnostic points and more significant than an apparently characteristic body rash.

Bell's average white blood count was 17,000, with a maximum of 38,000. The average polymorphonuclear count was 78 per cent. Albumen was observed in only 11 per cent., far below the average, and due, Bell thinks, to the patients being kept in bed and upon a strictly milk diet until temperature had been normal seven days. None of the cases contracted diphtheria.

The treatment of scarlet fever, according to the trend of the day, calls attention to serums and vaccines. Prophylactic treatment is also arousing interest, especially that introduced by a Russian, Gabritchewsky, and widely employed in Russia. According to Smith (*Boston Med. and Surg. Jour.*) 15,376 children were prophylactically vaccinated by Tesjakoff in the years 1907-09. Of these children 7,234, or 47.6 per cent., were vaccinated once; 4,060, or 27.4 per cent., twice, and 4,078, or 26.5 per cent., were vaccinated three times. Of all the children vaccinated 746, or 4.8 per cent., were taken sick with scarlet fever. Of those vaccinated once 478, or 6.6 per cent., were taken sick; of those vaccinated twice, 182, or 4.5 per cent.; of those vaccinated three times, 86, or 1.9 per cent.

It would appear, therefore, that it will produce a considerable degree of immunity.

Koessler is of the opinion that while the figures of the Russian justify his conclusion, the whole question assumes a widely different aspect if we compare these results with our conditions. Tesjakoff obtained in the children which he vaccinated three times such a percentage of morbidity as to reach 1.9 per cent. The morbidity in Chicago in the four years 1907-1910 shows an average of only 0.3 per cent. of the whole population, without prophylactic treatment. This does not infringe on the value of the prophylactic vaccination as such, but emphasizes how important it would be to know intimately the character of the severity of scarlet fever at every period of the year in the various countries of the world before we could apply such statistics directly to our own condition.

Gabritschewsky as well as Langowoi and Vladimiroff, later observed in about 10 per cent. of the children vaccinated at the place of the injection of the vaccine not only the usual signs of local reaction, but an involvement of the lymph-vessels and lymph-nodes of this region which became involved, swollen and painful. A small macular exanthem appeared round the point of injection and developed soon into a general scarlatiniform eruption. The general condition of the patient grew worse, an angina and strawberry tongue developed and as early as the second and third day a desquamation appeared, in some cases even going to hematuria. This whole picture resembles so closely that of scarlet fever that Vladimiroff concludes that this phenomenon demonstrates the primary etiologic rôle of the streptococcus. It is to be noted, however, that in America, the stronghold of vaccine therapy, streptococcus vaccine has been used in the last year in many thousand cases without one report of a single case in which similar symptoms developed.

Federinski in Moscow (1910), in an analysis of 317 cases which received the antistreptococcic serum (made from scarlet fever streptococci) says that it helps chances of recovery if given before the fifth day. His dosage was 200 c.c. to adults and 100 to 150 c.c. to children, repeated in twenty-four or forty-eight hours if necessary. Mathias Nicoll, New York (1910), reports only fair results. If obtainable, it should be used in some cases, in enormous doses always, for lack of something better, either subcutaneously or intravenously, according to necessity.

Waters of Boston reports good results in immunization against scarlet fever in nurses doing contagious work. Before going on duty the nurses received three doses of 50,000,000, 100,000,000 and 200,000,000 of a polyvalent vaccine of different strains of streptococci, killed and standardized in the usual way. Only 2.7 per cent. of the nurses receiving the immunizing doses contracted the disease, while 35.7 per cent. of those who were not vaccinated contracted it.

Before leaving the vaccine field it may be well to mention

the bacterin treatment of septic rhinitis of scarlet fever, of which Kolmer and Weston reported 100 cases (*Am. Jour. Med. Sci.*, 1911, No. 2). They claim that the late desquamation of scarlet fever patients is but little capable of spreading infection, but that nasal discharges are of great importance in transmitting the disease after isolation has been discontinued. They hold that the rhinitis of scarlet fever is septic in character, distinctly infectious in itself, and probably harbors the contagium of scarlet fever. Careful bacteriological examinations of 100 cases resulted in the detection of but four organisms, of which the staphylococcus aureus was by far the most frequent, occurring alone in 89 cases. These cases were treated by autogenous or by stock bacterins (vaccines) with 77 per cent. cures, 8 per cent. improved, 12 per cent. not improved, and in 3 per cent. the treatment was stopped before results were conclusive.

The care and treatment of the little patient suffering from scarlet fever is all important, and the most comprehensive article on the subject is from the pen of Mills Sturtevant, the resident physician at the New York Private Hospital for Scarlet Fever and Diphtheria Patients (*J. A. M. A.*, August 24, 1912), from which liberal quotations are made.

For diet he insists on water, milk and malted milk and milk sugar as long as there is any temperature, or if febrile albuminuria shows after the drop of temperature to normal. For the purpose of showing the amount of milk and water and its necessary sugar reinforcement, the following table shows the quantity to be given during the febrile stage, seven feedings a day at two-hour intervals, to be arranged according to the sleeping periods of the child and to his ability to digest the milk:

	Age Years	Calories	Amount Each Feeding, Ounces	Total Ounces Milk	Total Ounces Water
Adults....	.....	2,000 to 5,000	10	70	56
Children..	1- 2	600	4	28	28
Children..	2- 6	1,000	6	42	42
Children..	6-15	1,350	8	56	56
Children..	2- 6	1,000	4	28	28

To the milk given to adults it is necessary to add 3 to 7 ounces of milk-sugar to make up the calory contents.

When the temperature has been normal for twenty-four hours farinaceous foods may be given. A satisfactory way is to add new foods gradually; for example, cream soups with crackers are given the first day the diet is increased, milk toast the second, rice or farina pudding the third, and so on. As the patient is given farinaceous foods, and these come more and more to replace the milk, it is necessary to exercise some care that the total amount of fluid in twenty-four hours be kept up. It is desirable that in patients over six years old not less than 100 ounces of fluid be given. As solid foods are added, the milk can be replaced by water. On the twenty-first day fish may be given, then green vegetables, then bacon, to which are then added other red meats, chicken, meat soups, tea, coffee or cocoa, and, last of all, eggs. The diet list in use at Dr. Sturtevant's hospital is:

Milk Diet.—When specially ordered, milk-sugar, malted milk, buttermilk, cream soups and top milk mixtures.

Farinaceous Diet. Crackers, bread, toast, zwiebach, arrowroot, rice, cornstarch, farina, and preparations of these, baked potatoes, barley jelly, other cereals, stewed prunes, and baked apple with cream.

Light Diet.—In addition to the above, fish, green vegetables, bacon.

General Diet.—Red meats, fowl, meat soups, pastry, tea, coffee, cocoa and eggs.

Sturtevant recommends the anointment of the skin with cocoa butter or cold cream during the discomfort caused by the rash, and if the itching is annoying a gentle sponging with 0.5 per cent. dilution of liquor cresolis compositus. No greasing is done during desquamation unless there is discomfort. As the soles of the feet are the last to desquamate, as soon as the patients are able to get up they are encouraged to soak their feet well each day in hot water, after which the feet are rubbed with a rough towel or moist pumice stone. The bottoms of the feet may be painted with tincture of iodin. Salicylic acid ointment, six per cent., may be bound on over night.

Itching of the scalp during the first three weeks is treated and prevented by washing with alcohol. This should be followed by rubbing in a small amount of white petrolatum. At the end of the fourth week and twice during the fifth and sixth weeks the hair and scalp are washed with tar soap, then with the following hair lotion:

℞ Hydrargyri chloridi corrosivi..... gr. iv
Boricii acidi ..... gr. cl
Glycerini ..... ʒ ½
Alcoholis ..... ʒ iv
Aquæ .....q. s. ad ʒ viij

The hair and scalp are then dried thoroughly and the following hair tonic well rubbed in:

℞ Quininæ sulphatis ..... gr. lx
Olei ricini ..... ʒ j
Olei bergamottæ ..... ggt. v
Olei neroli ..... ggt. v
Spiritus ammoniæ aromatici .....q. s. ad ʒ viij

Mix and dispense with "shake" label.

The eyes are protected by boracic acid compresses and exclusion from light.

Cleanliness spells success with the throat symptoms. Irrigations of normal saline are advised at a temperature of 110° F. The saline should be placed in a fountain syringe held a foot above the head of the patient. The patient is turned on his side, protected by a rubber blanket, and the saline at low pressure allowed to run over first one, then the other, tonsil. The head is turned enough so that the fluid after bathing the tonsil runs out of the mouth and into a pus basin. Irrigations should never be given with much force, as the exudate may be forced back into the pharynx and so to the ears. In children too young to co-operate with the nurse, a sheet is pinned about the patient securing the arms and legs, a small roll of gauze bandage placed between the teeth and the irrigations given on a small dressing table. Sometimes with mild throats it is sufficient to cleanse the tonsils gently with a cotton pledget, soaked in sodium bicarbonate solution, wound about the nurse's finger. Gargles are not used. Small pieces of ice held in the mouth sometimes give distinct relief.

External treatment may be in the form of heat, cold or wet dressing. For routine treatment the throat-bag filled with cracked ice is used. This seems to give more relief and better results in most cases. Hot poultices are sometimes used.

The nose should never be irrigated unless both middle ears are involved. Drainage of the nose is accomplished by keeping the secretions as fluid as possible and by blowing the nose properly. Rendering the secretions fluid is best accomplished by putting in each nostril white petrolatum, which is made slightly more fluid by placing the tube in hot water before each application. This should be done four or five times in twenty-four hours. The patient should be taught to blow the nose gently and frequently, and not to sniff secretions back into the nasopharynx. In conjunction with the petrolatum treatment, if there is congestion and swelling of the mucous membrane, the nose is sprayed with eucalyptol and menthol one per cent in liquid petrolatum. When the acute stage is over and swelling of the mucous membrane with exudate persists, the glycerite of tannin either full strength or diluted with water often gives good results.

Proper care of the nose and throat is the best preventive of middle-ear trouble. Daily examination of the tympanum should be made by the physician, as the tympanum may rupture and pus be discharged from the middle ear with no warning of pain or rise of temperature.

If otitis media does occur, incision of the tympanum should be performed early. This may or may not be followed by irrigations of warm sodium bicarbonate solution every two hours. If irrigations are not given, the canal should be kept open by

cleaning thoroughly with cotton on an applicator, the frequency depending on the amount of discharge.

The prophylaxis of mastoiditis is the proper treatment of the otitis media. Throat-bags filled with ice should be applied to the mastoid as soon as the tympanum is incised. Or cold may be applied to the mastoid region by means of the Leiter coil.

The cervical nodes are the ones which usually demand attention. Good routine procedure is the application of the ice-bag to the throat during the initial week of illness. Occasionally hot poultices are necessary or wet dressings of acetate of lead, pulverized alum, alcohol, glycerin and water. This treatment will prevent suppurative adenitis.

The physician must watch the lungs and pleuræ. Pleurisy occurs during the third or fourth week, and if effusion is present aspiration must be done early.

Scarlet fever in a tuberculous subject is a very serious thing, as there is usually a lighting up of the tuberculous process. In such cases the danger of the tuberculosis becomes greater than the risk of nephritis and a more liberal diet should be given. Bacon which has been soaked in cold water several hours can be given early with little risk. Cod liver oil, if borne well, should be given. In many cases it seems desirable to give two eggs in milk per day. One egg can be beaten up in a pint of milk to be taken in two installments, two hours apart, with a glass of water in between. Fresh air is important.

The systolic murmur heard over the precordium, which is described by many authors as a symptom of scarlet fever, may be readily prevented in most cases. Sturtevant believes in giving iron to patients after the temperature has remained at normal for twenty-four hours. The preparations used are either ferrous carbonate powder in capsule, five grains three times a day, or the following:

℞ Iron and potassium tartrate ..... 1 part
Glycerin ..... 2 parts
Water enough to make ..... 12 parts
Mix. One teaspoonful in water three times a day.

Patients should be kept in bed until the twenty-fourth day of the disease, with one pillow until the eighteenth. It is desirable that the patient should attain the sitting position gradually. Two pillows may be allowed on the nineteenth day, three the twentieth, and so on, five pillows being so arranged as to allow sitting up in bed. On the twenty-fourth day an hour in a chair beside the bed may be allowed. Progress from here on should also be gradual, permitting a little longer time up each day, and a little more activity, the heart and pulse being carefully watched meanwhile as a guide to latitude in this direction. It is rare that digitalis is indicated. For routine use, as has been advised, it is surely too much of a kidney irritant.

During the early weeks of the disease the patient not only should be kept in bed, but also should be kept quiet. The allaying of discomfort and the prevention of consequent tossing and turning by sponge baths, by hot water bottles to cold feet, by frequent smoothing of a well-made bed and by the many things that comprise nursing comfort do much to conserve the heart. Insuring a proper amount of sleep in twenty-four hours is also important. The bowels should move freely daily, by cathartics if necessary. Fresh air should be provided in abundance. If endocarditis occurs the period of rest is of necessity longer. Salicylates are of doubtful value in simple endocarditis. Vaccines and serums may be tried in the infective variety. Pericarditis, either simple or purulent, may occur. The treatment is the same as when coming in the course of any other acute infection. Myocarditis is rare.

Sturtevant does not dwell especially upon the value of serum treatment, saying that in all septic cases it should be administered by someone experienced in its use.

Bismuth subcarbonate in doses of 60 grains usually relieves the cases of nausea and vomiting with epigastric pain and marked hyperesthesia. If this fails, six drops of one per cent. solution of cocaine in a wineglassful of water every fifteen minutes for four doses will help.

During the latter part of the fourth week and the fifth week heart burn is sometimes a very distressing symptom. This is relieved readily by milk of magnesia in teaspoonful doses. It is well to cut down the diet somewhat for a few days, particularly such food as may be taken after 6 P. M.

Constipation is the rule in scarlet fever. A cathartic should be one which does not irritate the kidney, and one which does not reduce too much the bulk of the urine. A tea made of senna leaves fills these requirements, and is very useful during the febrile period. Rhubarb, aloes and cascara sagrada are other anthracenes which may be used. Castor oil may be used alternately with one of the anthracenes.

The urine should be between 70 and 80 ounces in twenty-four hours and the specific gravity must be below 1.010. The urine should be carefully examined daily for albumen and casts.

Cream of tartar lemonade should be given to make the urine bland. If with a sufficient amount of fluid taken by the patient the urine continues to be of a specific gravity of over 1.010 or of a small amount or both, the acetate, bicarbonate and citrate of potassium, 7½ grains of each, in water, may be given every three or four hours.

When nephritis occurs treatment should be begun early, the accessory channels of elimination being made use of to relieve the kidneys, the urine made bland with saline diuretics and increased by forcing fluids, the diet restricted to milk.

As the temperature falls it is a common thing for the patient to complain of transient pains and stiffness in the joints. Prevention of this condition is attempted by the use of outing flannel night clothes, the administration of alkalies and proper catharsis. When it does occur a brisk saline purge should be given. Alkalies should be administered until the urine is alkaline. Salicylates may be given to allay pain.

The nervous symptoms can usually be controlled by a warm bath and 15 grains of bromide of ammonia.

The unusual success which has attended the cases at the institution presided over by Dr. Sturtevant gives material evidence of the value of the treatment as outlined.

In the Cincinnati Hospital, Bell took the opportunity of using the treatment for nephritis as suggested by Martin H. Fischer.

This therapy is based upon certain facts, which can be briefly summarized as follows:

It is assumed that nephritis is due to an acidosis in the kidney. Emphasis is laid upon the colloidal structure of the blood, both red and white corpuscles and the liquid portion, also that the urinary membrane, namely, everything between the urine and the blood, consists of various emulsion colloids in the solid state. Colloid material is also present in the urine normally, but is not visible as albumin to our ordinary tests.

The fluids and tissues of the body (except the gastric juice, urine, sweat, vaginal secretion, and alimentary contents, when fat is fed) are practically neutral in reaction. Normal blood is neutral in reaction, but contains both alkalies and acids.

An abnormal production or accumulation of acid in the kidney renders the colloidal urinary membrane soluble and permits a part of it to pass into the urine as albumin.

This has been demonstrated by experiments. Fibrin, an albuminous structure, when mixed and shaken with plain water (of neutral reaction) swells only slightly and the water shows no reaction for albumin. If hydrochloric acid is added there is greater swelling of the fibrin and albumin is present (by the precipitation of the fibrin) in the water in accordance with the amount of swelling. If sodium chloride or any other salt is mixed with the hydrochloric acid, less albumin goes into solution, the higher the concentration of the salt. Gelatin (another colloid) acts practically the same way as fibrin. A high alkali content can as readily put the colloids, fibrin and gelatin into solution (namely, dissolve the albumin) as can an

acid. This is probably no factor in the production of a nephritis as the normal CO_2 production in the living cells tends quickly to neutralize it.

Fischer found that by injecting acid into the ear of a rabbit its normally alkaline urine became acid. Albumin, casts, epithelial cells, blood corpuscles and hemoglobin appeared promptly in the urine, which was also diminished in quantity. Edema of the tissues was noticed as well.

An over-supply of acid in the tissues in extreme muscular exertion and the severe anemias, without adequate oxidation, shows albumin in the urine.

Contrary to the views of many, he holds that albuminuria is the constant accompaniment of salt starvation.

Actual experiments on the kidney by Fischer are in line with the preceding observations. He found that the structures of the kidney in the presence of an acid swell, take in water, and part of the colloid material is dissolved as albumin and precipitated as granules.

This brief summary suggests the "Fischer" treatment for nephritis, namely, an alkali, salt, and plenty of water.

Bell decided that as the contagious diseases are frequently accompanied by an acidosis, as exemplified by the presence of acetone in about 50 per cent. of his cases and diacetic acid in 22.6 per cent., that the alkaline treatment might help to control the progress in the severe septic types of the disease. Apparently it exerted little or no influence in staying the course of the purely septic types which were unaccompanied by any special nephritis. Fischer says that he would not expect it to have any material influence upon that type of case. Sodium carbonate given by the mouth was not well tolerated as a rule, and seemed to be somewhat more irritating to the rectum than a normal salt solution. However, a large majority of the cases retained a sufficient amount.

When giving an alkali per oris, potassium citrate was substituted every hour or two.

Bell shows a very low percentage of albumenuria, 11 per cent., and 2 per cent. of nephritis in 388 cases, due, he believes, to the routine alkaline "plenty of water" treatment.

Eighteen blood cultures were made during the year from the Cincinnati Hospital scarlet fever patients, of which nine were negative. In the other nine cases the staphylococcus pyogenes aureus was recovered seven times and the albus twice. No streptococci were recovered from the blood.

The throat and nose cultures almost uniformly showed the presence of staphylococci, occasionally mixed with a few streptococci.

There were 88 atmospheric plate cultures made in the wards before fumigation, and they showed the presence of the staphylococcus aureus and albus, the streptococcus pyogenes, but never the Klebs-Loeffler bacillus. After fumigation with formaldehyde, plate cultures were always negative.

Twelve cervical glands of scarlet fever patients were aspirated with aseptic precautions in an effort to corroborate the claims of Vipond made in the spring of 1911, that he had found the specific organism of scarlet fever in the glands of patients suffering from this disease. The cultures were sterile in nine cases; the staphylococcus pyogenes aureus was isolated twice and the pyoscyaneus once. Bell's results did not verify his findings, and this has also been the experience of others. Experiments by Dr. Nicoll show that Vipond's bacillus was probably a contamination from the asbestos packing of his syringe.

We believe the concentration of research with the end in view of definitely locating the micro-organism which is the causative factor in scarlet fever will shortly be attended with success. When that time comes the treatment of the disease will, of course, be changed to meet the conditions.

Twenty-seven per cent. of our annual deaths are of babies under age of 5; 200,000 of them die from preventable disease; about 150,000 of these are under the age of one year.

Medical Editorial Table

THE TRANSMISSION OF POLIOMYELITIS.

Professor M. J. Rosenau, at the recent International Congress on Hygiene and Demography, made an important announcement concerning experiments on the transmission of poliomyelitis. Rosenau began his work in the belief that the disease was spread from one person to another more or less directly. The work of Flexner gave this theory strong support, the presence of the virus in the nose and throat having been shown by him. Rosenau's faith was shaken by the fact that eighteen experiments failed to show the virus at these points, an experience in line with that of other experimenters. Moreover, children in all stages of the disease can be kept in open wards among other children without causing the disease to spread. Furthermore, when these children are brought from rural districts the disease, while not spreading to other children in the hospital wards, may continue to spread in the country district where they have lived. Rosenau turned to the hypothesis of an intermediate host and finally achieved successful transmission through the bite of the common stable fly, *Stomoxys calcitrans*. These flies exist everywhere, but are more common in the country. They bite through thick clothing and suck considerable blood, swelling up to large size. Rosenau exposed monkeys infected with this disease to stable flies in a large screened cage. Then healthy monkeys were exposed to the same flies. Out of twelve healthy monkeys thus exposed six subsequently showed symptoms of poliomyelitis, three in a virulent form. The diagnosis was confirmed by autopsy. Three other monkeys had milder symptoms more or less characteristic; autopsies not yet available. There is not a mere mechanical transmission of the virus, for it requires several weeks' incubation within the body of the fly after feeding on an infected monkey, before the fly is able to transmit the disease to healthy monkeys. The conditions thus resemble those which obtain in malaria and yellow fever. Fleas, lice and bedbugs do not act as intermediate hosts, at least experiments have been negative so far as they are concerned. In the animated discussion which followed Rosenau's announcement, Loeffler and Landsteiner pointed out that the stable fly mode of transmission did not preclude tranmission by other means. The latter cited epidemics occurring north of the sixtieth degree of latitude in winter, and Petterson cited other epidemics occurring in the northern part of Sweden in very cold weather. These facts were thought to suggest the improbability of the stable fly's connection with such epidemics. Nuttall and Flexner thought Rosenau's contribution tremendously significant and a great advance.—(*New York Medical Journal*, October 5, 1912.)

Recent Immigration Decisions.

The Solicitor of the Department of Commerce and Labor recently refused a warrant for the arrest and deportation of an alien who had developed manic-depressive insanity within three years after landing in the United States, on the ground that while the exciting cause of the insanity was subsequent to landing, the essential and true cause was a constitutional psychopathic tendency and mental instability which were hereditary and hence existed prior to landing. This decision made impossible the deportation of a class of insanities which formerly had furnished about 350 deportations annually from New York State alone. Since this ruling another even more flagrant has been made by Secretary Nagel. An eleven-year-old imbecile, certified as such by the medical officers at Ellis Island, was landed by order of the Secretary, on the ground that after she left her foreign dwelling place, "constructively" she became a resident of the United States, where her father was a naturalized citizen. This makes a very dangerous and

radical precedent. A case in every way comparable has been ruled against by the Supreme Court, on the ground that the alien child involved was not a citizen because it could not have resided in the United States when it had never even legally landed. Last March a feeble-minded alien was ordered landed by Secretary Nagel, the ostensible object of this admission being to permit the alien to visit a sick relative. The public has a right to demand protection against the admission of dangerous aliens. There is no more serious danger connected with immigration than that of the entrance of mental defectives. The administration of the Bureau of Immigration and Naturalization ought to be absolutely divorced from politics and partiality.—(*Boston Med. and Surg. J.*, Sept. 26, 1912.)

Iodine Sterilization of the Skin.

Ample testimony has accumulated during the past four years regarding the value of iodine sterilization of the field of operation as a routine measure. Bacteriologically and histologically iodine painting is superior as a skin disinfectant to "scrubbing up." Clinically it has been found to be at least as reliable. Its advantages are obvious. The official U. S. P. tincture (7%) in full or half strength is commonly used, but the skin must be free from moisture. Moisture may be removed before painting with benzine, alcohol or ether, but washing had best be done several hours before operation. Shaving should be done "dry," if done just before operation. Two serious objections have been raised against iodine sterilization. Propping thinks it responsible for post-operative intestinal adhesions, by contact of the gut with the skin and with iodine stained towels. Some subjects show an abnormal susceptibility to iodine dermatitis. As to the first objection, care should be taken to protect by ample pads and towels exposed coils of intestine from contact with the iodized skin. As to the second, this sequela can usually be obviated by using the iodine only once and in a single coat, and by washing off the skin, after the operation, with alcohol. There are also some conditions and situations in which the iodine method of sterilization seems inadvisable—in cases of hyperthyroidism; on the face; on the genitals. Further experience may teach us that it is wiser not to use it when much intestinal exposure is anticipated, and that when the skin is quite wet from perspiration, preliminary bathing with benzine or ether is insufficient as a drying measure to prepare the way for penetration of the iodine.—(*American Journal of Surgery*, October, 1912.)

Inheritance of Disease.

Our medical forefathers believed in the inheritance of disease. This belief has waned and now it is heretical to assert that any disease can be inherited directly. Weismann is chiefly responsible for this change of front, and other biologists have carried his views to the extreme. Karl Pearson has been perhaps the most conspicuous protagonist of the doctrine that acquired conditions are not inherited. It will be recalled that two years ago he compiled statistics showing that the children of alcoholics received no injury from the habits of their parents. J. George Admi declares that he is sufficiently old-fashioned to repudiate the new-fangled "weismannism," and still retains the belief that the sins so-called of the parents against the body do influence progeny unfavorably. He believes that these new ideas have their origin in the narrowness or Chauvinistic provincialism of the zoologists. His observations of the families of alcoholics make him feel that the children of confirmed drunkards show an increased susceptibility to the action of relatively small amounts of alcohol, as well as gravely affected vitality. He points out the relationship, often noted by practitioners, between chronic or acute infection suffered by either parent and abortion, blighted ovum, stillbirth, or monstrosity. Adami appears to subscribe to the old belief that the children of the tuberculous exhibit a peculiar liability to succumb to the same parental disease. At any rate, from the point of view of eugenics, we must consider the terrible effects of infections conveyed to the growing individual while in the womb or during parturition. The results of gonorrhea and syphilis from this standpoint are manifest to every physician.—(*Medical Record*, October 5, 1912.)

New York City's Sewage Problem.

The sewage problem confronting the metropolis is extremely difficult. There are no precedents, for no city in the world has anything like the difficulties. The Metropolitan Sewerage Commission reports that New York harbor is in a dreadful state of pollution from the discharge into it of wastes in far greater amount than can be oxidized. A certain percentage merely sinks, largely near sewer outlets, though the floor of the whole upper harbor is now covered to considerable depths, except where the currents scour it out in spots or channels and deposit it elsewhere. None of it reaches the ocean, as it is deposited long before the current could carry it that far. The harbor is in fact a septic tank which works so inefficiently as to constitute a cesspool needing periodical excavation. Further increase of pollution is intolerable. Sewage experiment stations should be established. Polluted sewage disposal plants alone the whole shore line would be far better than the present cesspool condition. The septic tank should be replaced by "settling" reservoirs in which the grosser materials may be separated and removed, the raw sewage passing on to the filter for destruction of its suspended and dissolved impurities. It may yet become necessary to build tunnels under the harbor to conduct the sewage to distant filters. The cost would not be prohibitive. At the rate at which population is piling up the problem threatens to become very serious indeed. The sooner we wake up the better. We must begin to think in huge terms in this connection and we must drop our cheap-John sewage habits and provide our engineers with ample funds. They can solve the problem, for they have solved far more difficult ones.—(*American Medicine*, Sept., 1912.)

The Scientific Study of the Alcoholic Problems.

In New York City in 1870 a number of physicians and medical experts formed an organization, called The American Society For the Study of Alcohol and Other Narcotics. This was the first medical association in the world to take up the study of alcohol and inebriety, and determine from clinical experience, laboratory studies, and groupings of facts, the phenomena of the spirit and drug neuroses.

The special purpose was to study this subject, above all theories and conclusions, particularly its etiological, physiological, therapeutic and medico-legal relations; also to compile and make available such studies for home, office and institutional treatment, and point out the remedies and prophylactic measures for restoration and cure.

The 42d annual meeting of this society will be held at Washington, D. C., December 10 and 11, 1912. A large program of scientific papers from medical men, many of them distinguished foreigners, will be presented. This meeting and the subjects discussed will attract a great deal of attention, not only among medical men, but an increasing number of laymen, who have an intense personal interest in alcohol and drug taking.

Programs and further information can be had by addressing the secretary, Dr. T. D. Crothers, Hartford, Conn.

The cardiac irregularities encountered in hyperthyroid conditions are interesting, but do not aid us in the diagnosis. The vasomotor changes, including the sense of warmth and subjective improvement in cold weather, do not seem to require detailed consideration. They are often of great diagnostic value, just as a marked sensibility to cold is a valuable hypothyroid sign.

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NEW YORK, DECEMBER, 1912.

NEW YORK AS A CLINICAL CENTER.

The City of New York outdid itself on the occasion of the recent Clinical Congress of Surgeons of North America and it has established in the minds of the 2,600 surgeons who registered in the the superiority of the metropolis as a clinical center. Doubtless never in the history of American medicine has this congress been equalled. Surgeons from nearly every state and from several European countries were in attendance, while Canada sent down 40 representatives.

It was the largest and most representative surgical body ever gathered together in America.

Satisfaction was the unanimous sentiment of the visitors. A great wealth of clinical material was placed at their disposal and the only difficulty was in deciding what to see. On one day 225 clinics were given and over 800 operations performed. The evening addresses were characterized by profound erudition and were fitting climaxes to days of ceaseless activity.

The Clinical Congress has developed into a powerful entity and one which will do much toward shaping American surgical thought. Its leaders are the great surgeons of the day. Mayo, Murphy, Martin, Crile and Ochsner, are names which will be written large when the history of American surgery is set down. With these men to set the pace, the Clinical Congress will travel fast toward surgical perfection and if we mistake not, it will become the greatest clinical body in the medical world.

The Congress definitely established New York's right to the premier position as a clinical center. With its seven medical schools, three post-graduate schools, 117 hospitals and innumerable dispensaries, New York stands in a class by itself. No American city can commence to equal its remarkable facilities. The clinics held during the Congress were nothing out of the ordinary. They are being given week in and week out and the only difference was that the light of publicity was thrown upon the activities of New York's surgeons for six brief days.

Why is New York believed by many physicians in other parts of the country to be second to Philadelphia and Chicago? Why are New York's splendid surgeons not as well known as the surgeons of other cities? Because New York has hidden its medical light under a bushel. Content in the knowledge of its own superiority, New York has rested on its oars and has allowed the reputation of supremacy to slip away to other cities. The Clinical Congress aroused New Yorkers to a sense of their own greatness. They did not dream 225 clinics could be given in the city's hospitals daily without disturbing the even tenor of their ways. They forgot they have nearly twice as many hospitals as any other city.

Now that the magnificence of New York's medical and surgical opportunities is recognized, a systematic effort should be made by the hospitals and medical schools to attract physicians to the clinics. Men who now waste valuable time in Europe clinics, "watching operations they cannot see," hearing lectures in a language they cannot understand, should be attracted to New York. A clinical society is said to be in process of formation, with a paid non-medical woman secretary to stimulate medical interest in New York. That is well as far as it goes, but it stops short of the real mark. Why do not those who would be most benefitted combine and advertise the various clinics in the medical journals? Why do not the hospitals, which make up their schedules in advance, tell the profession through the medium of the medical press on what days certain men will operate in their operating rooms?

Potentially New York is as great a clinical center as any in the world. It only lacks the right kind of publicity to bring its unusual attractions to the attention of the profession. A well planned campaign, with the spotlight directed toward Manhattan, will bring results of a thousand fold.

The MEDICAL TIMES will gladly open its columns for the purpose of furthering this praiseworthy cause and we know the entire medical press in the city will be glad to follow suit.

Let us get together and make New York The Clinical Center of the universe.

NEW THOUGHTS IN RACE DEVELOPMENT.

Modern obstetrics tends to unfit women for motherhood, if we can accept an interesting theory set forth by one of the speakers at the recent Eugenics Congress. The high development of the art of obstetrics was claimed to usurp the powers of nature, thereby creating a class of women especially dependent upon specially trained practitioners of the art. It was held that this dependency tended to become a characteristic of the progeny of this class of women.

There is considerable food for thought in this theory, and probably there is a measure of truth in it. Certainly the art of obstetrics has reached a high point of development, and the consequences flowing therefrom may not be an altogether unmixed good for the race. In these not generally thought of consequences we may

perhaps witness another phase of the "degeneration" which follows in the wake of our highly artificial civilization.

Another interesting pronouncement is that of Woods Hutchinson, to the effect that however much society may have owed to geniuses in the past, we shall soon no longer regard them as racial assets, and in fact will be able to dispense with them. The scheme of eugenics, he holds, is concerned with the encouragement of a "normal" grade of men and women rather than with the creation or fostering of the especially gifted.

We think such postulates debatable. To us they appear to smack of the common Philistian distrust and misunderstanding of the genius as such. Back of them is the idea so ingrained in the commonplace mind of the essential insanity of genius. It is our own belief that the true and highly specialized genius is the greatest of society's assets. The most that we can say against him is that by reason of his delicate nervous organization he is more prone to insanity when too severely tried in the crucible of life. But that genius is essentially insane we deny. To the degree that clinical insanity enters into the mental complex of such individuals are their intellectual and creative powers impaired. These facts should not blind us to the indispensableness of men of this type. The prevailing tendency to argue otherwise bespeaks intellectual plebeianism.

STATE, INSTEAD OF FEDERAL MARRIAGE LAWS.

That we may produce a race of Americans that will be mentally and physically fit, Prof. Edward A. Spitzka, the eminent Philadelphia anatomist, advocates the enactment of a Federal statute which will carefully govern marriage. He says that courtships are conducted entirely along romantic lines, or with financial or social gain as the ultimate goal, without thought of the necessity of physical well-being on the part of the contracting parties.

We are glad to note that this important subject is attracting the attention of such thoughtful men as Spitzka, but we feel he is ahead of the age in his desire to effect changes by means of the Federal government. The placing of reformatory laws upon the statute books of the various States is the result of popular agitation and education. Such means can be readily used to impress State legislators, but it is difficult to make members of the National Congress view matters in such a way. Lawmakers in Washington are particularly disinterested in health affairs, as the American Medical Association has learned to its sorrow in pushing the Owen bill. We feel that on the subject of marriage regulation, as on all topics relating to health, our efforts will be better spent in passing State laws than in attempting to enact Federal legislation. Widespread interest is being manifested in the furtherance of proper marriage regulations, and united effort on the part of physicians, through their societies, and the clergy, is certain to be productive of results.

EMINENCE AND CURES.

Dana tells us that "to a very large extent clinical or descriptive medicine and gross pathology are a finished story." If this be true then it behooves us to make greater progress in the way of therapeutics, since it is in this field that the greatest gaps remain to be filled in. Eminence should more and more come to depend upon signal success in making sick people well. This is a phrase which sounds almost homely. At the present time everything else but cures determines celebrity in medicine. Science and personalities are in conflict. The pendulum of medicine is still anchored to the fetish of personality. We have a situation in science not unlike that in politics. Men cannot give up the belief in demigods; cannot put principles before men. Great personalities are exploited instead of great cures. To cure or not to cure—that is the question.

Are we ever to have a thoroughly efficient therapeusis? Are we ever going to put the cure of the sick man before all other considerations? Are we ever going to gauge eminence in medicine chiefly by actual success in restoring the sick to health? When we say therapeusis we do not mean to imply the use of drugs chiefly. We mean anything and everything that will make the curable well. And when we say "cure" we employ the term in its scientific sense, and not in the cynical, ultrascientific spirit which too often characterizes our leaders.

ARE FAKE METHODS STILL MORE OR LESS PREVALENT?

By the above title we mean fake methods as employed by "somewhat" irregular practitioners and out and out quacks. For example, treatment of locomotor ataxia by static electricity with implied or direct assurance of cure; for another example, electrical excitation of the abdominal muscles, with impressive subjective sensations, as a "cure" for constipation; for another, luminous high frequency effects around felons and all sorts of local lesions; for yet another, electrical "dickering" with enlarged prostates and huge uterine fibroids.

We think we have some reason for believing that these things are somewhat played out and that nothing has taken their places. We have not observed many instances of late and have heard little about such cases.

"You can't fool all the people all the time" with the same thing. Therein is the reason why the fakes peter out. Those who employ them must be versatile in their choice and use of doubtful methods, if they would "succeed." One who treats everything with the static machine year in and year out will ultimately have only a few simpletons for clients. The same thing is true, relatively, of those who use electrical apparatus of different sorts and kinds, but who confine themselves to electricity as a therapeutic agent.

People "get wise" to these fakes. The New York public is reasonably shrewd in these matters. Then the education of the public has been a considerable factor in leading to the dethronement of the quack—a far more important factor than sleuthings and prosecutions. Only the very clever, "high-class" quacks can "stand the racket."

ON QUACKS.

We think there are some popular misapprehensions in regard to quacks. They are nearly always conceived of as mere money grabbers. This is not invariably true of them. Many of them delight in the practice of "fakery" for its own sake. They are merely queer. The quack is not necessarily avid in respect to money. We should call the quack of the type under discussion a criminaloid. The quack who makes false pretenses and representations and

employs fake methods for the sole purpose of separating his victims' money from them we should call a criminal. The latter is the more common species but the genus quack also includes a fair sprinkling of the criminaloids.

Thus Pomeroy, in New York, who lapses into a trance and diagnoses his patients' ailments without examination, and also prescribes for them while in the trance state, cannot be actuated wholly by lust of lucre, for he will not treat a case which he has any reason to suspect is incurable by his methods and probably curable by legitimate ones. He refers operative cases constantly. Were this man an unscrupulous swindler he would not exhibit such decency. He certainly constitutes a curious moral phenomenon.

The point is that there are quacks and quacks and no single designation covers all of them.

ON "THOROUGH EXAMINATIONS" AND LEARNED "PATIENTS."

The patient who demands a "thorough examination" usually impresses us as a bumptious character and gives us a moment's amusement. But properly regarded the demand—or request—is really the best of the compliments we occasionally receive, and the most subtle. For by implication our capabilities are rated very high. Think for a moment what a "thorough examination" would be, were it ever carried out. To be sure no man could make such an examination, but the patient who is desirous of having himself well looked over compliments the man whom he selects most highly—far more highly than he suspects, for he cannot know what a "thorough examination" really means. Doubtless part of our amusement in the foregoing situation is derived from our realization of the lay applicant's scant conception of the real significance of his request, or demand, and our knowledge that it is an order that is never, and, in the nature of things, never can be, filled.

Nevertheless, the thoroughly up-to-date pseudoneurasthenic "patient" who is addicted to medical consultations expects to have his hemoglobin color index determined, his urea output estimated, his urine tested for indican, and his retina inspected. Some of these gentry have an astounding knowledge of medical literature and technics and one must either overrule them at all points through sheer superiority of knowledge or else bamboozle them, one of the most pleasant diversions of the harassed medical man. We need not particularize, for every reader knows exactly what we mean. These people are usually not patients, properly speaking, and we are violating no canon of ethics in regarding them as entertainers.

Perhaps our title should have been: "IN THE CONFESSIONAL."

Lèpine has produced temporary increase of the amount of sugar in the blood by injecting a culture of staphylococci into the jugular vein of dogs.

The mouth, teeth and gums, when in a septic, carious or pyogenic condition, are depots for the propagation of microorganisms; manufacturers of toxines and ptomains; agencies for the absorption and dissemination of the products of decomposition, putrefaction and pyogenic conditions generally.

Public Health

One Day of Rest in Seven.

The rule of life laid down in Deuteronomy "Six days shalt thou do all thy labor," like so many of those ancient Jewish commands and rites has now come to be recognized as a regulation of conduct supreme in importance to personal health and national well-being, and yet in this year of grace 1912, we found our fellow citizens by the hundred thousand are working, toiling without let up seven days a week. In the great steel and iron industries where furnaces never go out and where branches of the work continue uninterrupted by season, night, Sunday or holiday, men must attend to these continuous processes. Railroads and street railways must operate every day in the week. So are telegraph and telephone companies and public restaurants among those which general public convenience requires to be operated seven days in each week. On the other hand on farms where one day each week the work comes to a stop, except such necessary duties as feeding the stock, milking the cows, etc., in offices which universally close for one period of one whole day in each seven and often for a period of a day and a half; in the majority of factories, department stores and other places where men and women work, one day of rest in seven has become the accepted rule.

Complete statistics of seven day labor are unattainable, as reports of this character are not required by law. We know, however that 3,745 union teamsters in New York and nearly 2,000 telegraphers have a 7 day week, that over 35,000 labor union men and over 10% of the total labor union membership reporting to the New York Labor Department in 1910, were regularly working on Sundays. If this is the proportion among the organized who have long agitated for one day rest in seven, it is beyond doubt that unorganized workers to a far greater extent are required to labor on Sunday and seven days in the week. In Massachusetts a joint committee of the Legislature reported after investigation in 1907 that 221,985 men in 16 trades and callings, not including factories were employed on Sundays in that State. The Bureau of Labor in Minnesota for 1910 reported 98,588 men working seven days per week including 49,166 railroad men and 3,705 trolley men. The investigation of the United States Department of Labor in 1911 found nearly one third of the men employed by the U. S. Steel Corporation working seven days a week, a condition since somewhat improved by the action of the Board of Directors.

A certain confusion has arisen in many minds between the demand for one day of rest in seven and the demand for Sabbath Day observance or the enforcement of the Sunday laws. These laws forbidding labor on Sunday but permitting "works of charity and necessity," leave the door wide open for every industry in whole or part having continuous processes and for many other occupations where desire for added profits twist a time-worn phrase into a recognized permission to serve the public convenience. "Sunday observance" has not, never will and never should interfere with continuous process industries. Furnaces must be kept up and certain manufacturing operations must be carried on without interruption if certain products are to be turned out at all. It would be intolerable if hotels and restaurants were to close on Sundays and manifestly it would be against the public welfare if no wheel might turn on railroads, subways, surface cars and steamboats on Sundays. Here is where the Sunday law breaks down. Such laws must give way before public necessity and convenience, furnaces must be ready to pour out their molten metal on Monday morning. The public must have a place to eat in and at least a strap to hang to on Sunday as on Monday.

It is the widespread failure of these laws to meet the actual situation that has given rise to the now widespread demand for one day rest in seven. With such a provision written into

our statute books, every ore worker, every conductor, every waiter and teamster, telegrapher and drug clerk would have one day rest. For some the day of rest would come on Sunday, for others on Monday and others would have for rest each some one other day. A slightly larger force would be required in these seven day industries so as to thus make provisions that each day one seventh of the entire force might have its necessary and just day of rest. To the claim that this may be hard on certain industries, Americans are now prepared to answer with conviction that seven-day continuous industry is too hard on men.

The Rapid Growth of Open Air Schools.

With the opening of the fall school term, over 200 open air schools and fresh air classes for tuberculous, and anaemic children, and also for all children in certain rooms and grades, will be in operation in various parts of the United States, according to the National Association for the Study and Prevention of Tuberculosis.

All of these schools, the association says, have been established since January, 1907, when the first institution of this character was opened in Providence, R. I. On January 1, 1910, there were only 13 open air schools in this country and a year later the number had increased only to 29. Thus, the real growth in this movement has been with the last two years.

Massachusetts now leads the states with 86 fresh air schools and classes for tuberculous, anaemic and other school children, Boston alone having over eighty. New York comes next with 29, and Ohio is third with 21. Open air schools have now been established in nearly 50 cities in 19 different states.

Based on figures of population and mortality furnished by the United States Bureau of the Census, it is estimated that not less than 100,000 children now in school in the United States will die of tuberculosis before they are eighteen years of age, or that about 7,000 of these children die annually from this one disease. Estimating that on an average each child who dies from tuberculosis has had six years of schooling, the aggregate loss to this country in wasted education each year amounts to well over $1,000,000.

This loss and much of the incident suffering could be materially decreased if open air schools or classes for these children and those who are sickly and anaemic were provided.

The association estimates that there should be one such school for every 25,000 population, especially in cities.

Medical Supervision of Schools.

Dr. W. A. Evans, former Health Commissioner of Chicago, says parents have a right to expect from school inspection:

"That contagion will be less than in uninspected cities of the same size in the same climate.

That epidemics will be more than twice as far apart as before school inspection.

That it will never be necessary to close the schools for contagion.

That each generation will grow up stronger than its predecessor.

That there will be fewer deaf, fewer hunchbacks, fewer cripples.

That, eventually, the schools shall be properly ventilated.

Every parent has the right to expect his child to have fewer colds, fewer coughs, fewer sore throats, less rheumatism, and less heart disease than prevailed before inspection, to go through his school life without ever having been in danger of smallpox or losing a day from this contagion.

To go through school life without having diphtheria.

His child's chance of scarlet fever to be reduced to one out of six; of measles and whooping cough to be less than before school inspection.

To be told when sore throats are due to diphtheria and when to ordinary bacteria.

Not to get lice or itch or ringworm in school, or, if the child does, the school inspection shall correct the condition promptly.

To have headaches rarely or never; not to be tired at night, or listless, or pale and flabby looking.

That the child shall not become a mouth breather or get to be lantern jawed.

That he shall want to play, enjoy play, and know how to play.

That he shall make at least one grade a year and every year or so an extra grade.

That if he be feeble minded, or deaf, or blind, or crippled, or tubercular, he shall be cared for by special teachers in special schools and in a special way.

The parent should support his child in school, making little or no money during the school years.

That is about what the law says and it is good sense and good judgment as well.

If the parent is forced by law to keep his child in school for six hours a day five days a week for ten months a year for eight years he has the right to insist that the school room be well ventilated; that contagion be kept out of the group, and that the school do everything it can for the physical welfare of the children to the end that they study better, learn faster, and grow up in strength."

Ten New Commandments.

Dr. P. M. Hall, Health Commissioner of Minneapolis, read an instructive paper on handling garbage at the last conference of the Sanitary Officers of the State of New York.

He showed how the garbage of Minneapolis is collected in steel tanks of 100 cubic feet capacity and hauled to a central transfer station, where the tanks are lifted off the wagons and put on flat cars to be hauled to the disposal plant. There they are dumped directly into the fire through a hopper.

Through the burning of the garbage Minneapolis is able to produce enough steam to operate all of its machinery, and to heat and light the group of work-house buildings, the superintendent's house, the tubercular hospital, and two green-houses. It is the intention of the city to place near the crematory, all of the infectious disease hospitals, that they may be heated and lighted in the same way. One of these hospitals of 130 beds, for advanced tuberculosis, is already under construction. This service of heat and light is furnished to the city at a cost of 8 mills per horse power (or equivalent to 30 pounds of water evaporated) for heat, and 3 cents per kilowatt for light

This city has thus been able to handle garbage without nuisance from kitchen to ash-pile, and to do something in the way of utilization besides.

The cost of collection and disposal has been very low. For the year 1909, the per capita cost to the citizens of Minneapolis was 19 5-6 cents. This figure also includes the cost of collection and handling ashes, and represents the gross cost without deducting anything for the service of heat and light.

Dr. Hall recapitulates this paper in the form of "The Ten Commandments for Handling Garbage Without Nuisance."

I. *Drain Out Moisture.*—Use detachable sink-strainers.

II. *Wrap In Paper.*—Keeps garbage from heat and flies; prevents freezing and sticking to can in winter.

III. *Use Metallic Cans.*—Non-corrosive metal, over-lap self-locking cover, and free from holes.

IV. *Use Painted Steel Wagon Boxes.*—Constructed water-tight and to be mechanically dumped.

V. *No Dumping on Floor.*—Box mechanically elevated and contents emptied into incinerator hopper without nuisance.

VI. *Indraught at Hopper.*—Prevents escaping smoke and odors.

VIII. *Mechanically Charged Incinerators.*—Eliminates the nuisance of exposed garbage and the inhaling of foul odors.

VIII. *Good Draught.*—Creates rapid combustion and high temperature, burning everything of obnoxious nature.

IX. *No Residue Left Over.*—Nothing to make a nuisance around the plant—nothing left but ashes.

X. *Generate Steam.*—For self-operation and sell surplus heat, light and power to make plant self-sustaining.

Poverty and Tuberculosis.

That tuberculosis is responsible for one-third of the sickness that reduces families to dependency is indicated by a study just completed by the New York Association for Improving the Condition of the Poor, which states that the facts obtained indicate that this disease is the cause of over eight per cent. of the destitute homes in New York City.

Having determined by investigation that sickness is the chief cause of dependency among families in its care, inquiry was recently begun to learn which diseases are most prevalent among dependents so that preventive work can more intelligently be planned. The 6,565 families which sought the association's aid between October 1, 1911, and June 30, 1912, were selected for the study. It was learned that of these families 1,605 were forced to seek aid because of illness. In some the income had been hampered or cut off by the illness of the father or mother. In others sickness of one or more members had exhausted savings and heavily taxed earnings.

Tuberculosis was the disease found in 555 or 34 per cent. of these families. Rheumatism forced 187 other families into dependency. The remaining were classified as follows: Illness attending child birth 161, kidney and heart disease 165, anaemia 156, operations resulting from injuries 106, pneumonia 99, children's contagious diseases 48, paralysis and epilepsy 48, eye and ear diseases 45, cancer and tumor 44.

"The results of this study plainly show the urgent necessity for more adequate care of tubercular patients, especially those in improverished homes," said General Agent Kingsbury. "They also demonstrate how important is the prevention of the disease in the campaign against poverty. The facts justify the effort now being made by the association to devise a practical plan for the treatment and cure of the disease in the home. If the three-year demonstration the association is making in its Home Hospital in the East River Homes is successful, a practical means of wiping out the disease in the tenements will have been effected. As the hospital has been in operation only since last March, Dr. Linsly R. Williams, the Medical Director, believes it is too early to determine with any degree of accuracy what effect adequate home treatment under proper conditions will have upon the disease. However, the fact that no unfavorable conditions have been noted thus far leads him to believe that the association will before long be able to offer a more speedy and economic plan of wiping out the disease than is now employed. Moreover, the association is, for the first time in the history of relief work in this country, providing on a comprehensive scale, adequate relief, care and treatment for tuberculosis in the tenement homes of the poor.

"Some plan of effective home treatment must be found, for it will be many years before there will be enough hospitals and sanatoria to accommodate all tuberculosis patients, despite the excellent work now being done to meet demands. A comparison of the hospital provisions in the United States with the needs and growth of population shows that the demand is increasing twice as fast as the supply."

The American Federation for Sex Hygiene.

The primary and specific object of this organization is the study and application of all means, educational, sanitary, moral, and legislative, which promise to be most effective in preventing the spread of vice and its diseases.

The Federation proposes to begin this work chiefly along educational lines. The educational campaign includes—

1. Enlightenment of the public in the knowledge of the enormous prevalence of venereal diseases, their dangers to the public health, and especially the dangers to the family and the race from their introduction into marriage.

2. The education of parents to the great importance of instructing their children at an early age in the origin of life and the facts of sex.

3. The education of young people in the physiology and hygiene of sex, through the introduction of sex teaching in schools and colleges, as a necessary and integral part of a rational education.

The chief features of this educational policy are publicity and sex instruction. The methods which are now available and which promise to be most effective, are lectures and conferences and the distribution of educational literature.

The Federation proposes:

(a) The organization of a corps of lecturers chosen for their special fitness for this work, who shall address public audiences of men and women and various social groups throughout the country.

(b) The wide distribution of educational literature and the giving of lectures, in the Y. M. C. A.'s, the settlements, large industrial organizations, trades and labor unions, to the employees of railway and street car companies, factories, department stores, soldiers and sailors, and to secure the co-operation in this educational work of employers' associations, civic clubs, federation of women's clubs, and social and reform associations.

(c) The establishment of educational centers in cities and towns which shall carry on local educational work, in co-operation with the various societies composing this Federation, and the formation of similar societies in cities where they do not now exist, in order to increase the active working forces of the Federation.

(d) The preparation of a sex hygiene and eugenics exhibit which shall be exhibited in all the large cities of the country.

(e) The selection of an advisory committee of trained experts consisting of leading educators, sociologists and physicians, who shall pool their wisdom in the formulation of the matter and methods of sex instruction in schools and colleges. the preparation of suitable text books on sex education, and to make a digest of existing sex literature with a view of recommending judicious books to the public for general reading.

(f) The establishment of special courses in schools of pedagogy, teachers' colleges, and normal schools, for the purpose of preparing teachers to impart sex instruction wisely and effectively.

(g) The enlightenment of advanced students in high schools and colleges, through medical lectures, of the nature and dangers of venereal diseases and their modes of contagion direct and indirect.

(h) To enlist the co-operation of boards of health, state and municipal, in securing the health department control of venereal diseases; to demand hospital treatment of all cases of venereal diseases which are not or cannot be properly treated in private practice; and to urge upon municipal and state authorities the necessity of providing larger and more adequate facilities for the treatment of venereal dieases in order to promptly sterilize sources of contagion and thus prevent the infection of others.

(i) To study the fundamental causes of prostitution and the social and economical conditions of which it is the outgrowth, in order to apply fundamental remedies.

Infection By Means of Vegetables.

Recently Creel has demonstrated conclusively that the leaves of plants grown in infected soil may carry with them the bacillus. In April, lettuce and radish seeds were planted out-of-doors, exposed to natural conditions as to soil, sunshine, and rainfall. On the second day after planting the seed the surface of the ground was sprinkled with a fecal emulsion mixed with a twenty-four-hour-old agar culture of the bacillus typhosus. After the plants sprouted the tips and leaves were at intervals of two or three days carefully removed well above the ground so that no particles of earth would be taken up. The tips and leaves were then rubbed over the surface of the culture me-

dium, or washed with broth and the washings plated. Creel was able to recover the bacillus typhosus from the plants for varying periods, the longest of which was thirty-one days after the infection of the soil, a period, as he states, long enough for some kinds of lettuce and radishes to mature.

Asexualization of the Unfit.

Barr made a personal study of 4,050 cases of imbecility, and found that 65.45 per cent. were caused by malignant heredities; of these 25.43 per cent. were due to a direct inheritance of idiocy, and 6.91 per cent. to insanity. He cites the following examples of the influence of heredity in the production of the unfit and criminal members of a community. A man of thirty-eight years is the father of nineteen defective children, all of whom are living; he and his wife are mentally below par. A man has two daughters and one illegitimate grandchild, all feeble minded. A family in seven generations numbers 138 individuals and records ten stillbirths, sixteen insane, seven imbeciles, three epileptics, and thirty-two with noticeable mental peculiarities; eighty are apparently normal, but are hopeless slaves of a neurotic heredity. Of fifteen imbecile girls, three were prostitutes, nine had one illegitimate child each (two being the result of incestuous intercourse with brothers), one had two illegitimate children, two epileptics had three and four idiotic children respectively. Four feeble minded women had forty illegitimate children. Barr advocates the compulsory asexualization of the unfit as the only truly effective and logical remedy. He says those thus treated are greatly improved, mentally and morally.

Public Health in America.

In his president's address before the Fifteenth International Congress on Hygiene and Demography at Washington, September 23-28, H. P. Walcott, Boston (*J. A. M. A.*, October 12), explains the conditions of public health regulations in this country, showing that at the time the federal constitution was adopted no question of sanitation had ever arisen and public hygiene cannot be said to have had an existence. It is natural, therefore, that that instrument contained no provision for federal control in health matters, and hence these have had to be left to the different States. It was only in foreign quarantine and intercourse between the States that anything was left to the gederal government. The original idea of the United States census was to count the population, but lawmakers have been forced by public opinion to enlarge its scope to something like that of other civilied lands, and it is also true that it has been found possible to attack to the Public Health Service, in the Treasury Department, some of the functions of a national board of health, and these have been performed with conspicuous ability. The declarations of the political parties at the present time are promising as regards a still larger scope for the work of the national government in the matter of public health and it is to be hoped that the Owen's bill now awaiting action in Congress will be passed. Walcott reviews the work of the various public services in Washington in the study and prevention of disease, in the case of yellow fever, the prevention of cholera epidemics and plague and the various investigations of leprosy and other disorders, and enumerates some of the other diseases that must fall under the notice of the public authorities. He also mentions the other problems that are being investigated in the great endowed research institutions of this country.

Chronic Leg Ulcer.

W. S. Gottheil, New York (*J. A. M. A.*), reports three cases of cancerous degeneration of chronic leg ulcer. He finds the literature of such cases very scanty though some text-books mention the subject in a casual way. In spite of the constant irritation and other unfavorable conditions which should make us think that cancer might be developed from such ulcerations, it seems to be one of the rarest of their consequences.

Diet, Hygiene and Nursing

BACTERIOLOGY.*

William Henry Boese, M. D.,
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Part VI.

(*Continued from p. 315, October.*)

Point of Entry of Bacteria Into the Human Body:—Bacteria may enter the body through the skin and superficial mucous membranes, alimentary canal, respiratory tract, and placenta.

Skin:—The unbroken skin usually protects against the entrance of micro-organisms; when they do enter it is usually through the glands of the skin or through an unobserved wound.

Mucous Membrane:—The moist surface of the mucous membrane is favorable for the multiplication of bacteria. Mucus is only slightly destructive to some bacteria, while others are not acted upon at all.

Eye:—The lachrymal section of the eye is slightly germicidal, that is, germ destroying and by flowing over the eye tends to keep it clean. In infancy the eye is readily infected by the gonococcus.

Nose:—The nasal secretion is only slightly bactericidal. Streptococci and other bacteria are usually found in the deeper portions of the nasal cavity.

Mouth:—The mouth is usually cleansed by the slight germ destroying power of the saliva, but when decayed teeth are present many varieties of bacteria are found. The tonsils with their crypts harbor pyogenic germs and are easily infected by diphtheria bacilli and others.

Lungs:—The normal lung is rapidly freed from bacteria by the cells covering the air vesicles and by the leucocytes that enter the bronchioles and air sacs.

Stomach:—The stomach by means of its hydrochloric acid destroys most non spore bearing organisms in a short time. It is only when the gastric juice is neutralized or the bacteria are protected in food from the action of the gastric juices that the germs can pass through the stomach alive. Tubercle, typhoid, colon, and dysentery bacilli readily pass through the stomach when fed by the mouth. The stomach is exceptionally free from bacterial inflammation.

Intestines:—On the whole, the intestinal secretions have little or no germ destroying power. Pancreatic juice destroys many bacterial poisons, or toxins.

Significance of the Point of Entry of Bacteria:—The location of the point of entry of bacteria into the human body is of great importance. Certain bacteria lodge best in certain tissues while others will not develop so rapidly in those same tissues. For instance, if we take the three germs, typhoid bacilli, diphtheria bacilli, and very virulent streptococci and were to rub them upon an abrasion of the skin, the typhoid and diphtheria bacilli would probably cause very little, if any local infection; whereas the streptococcus would produce a severe cellulitis and possibly a fatal septicaemia. If, on the other hand, these same germs were applied to the throat, the typhoid bacilli would again be harmless while the diphtheria bacilli would produce inflammation, a pseudo-membrane and symptoms of toxaemia and the streptococcus would cause an exudate, an abscess or a septicaemia. Again taking these bacteria and introducing them into the intestines we would soon find that the typhoid bacilli are the most dangerous and would produce the lesions of typhoid fever, whereas the diphtheria bacilli and streptococcus would probably be harmless.

These illustrations given by Park are very striking. They show how certain bacteria in order to enter the body require

*Abstract of a lecture delivered before the nurses of Lebanon Hospital.

a point of entry in a tissue which is favorable for its growth. They also show the importance of protecting certain special parts of the body in the different infectious diseases. Thus, we see that it is especially necessary to protect food from contamination in case of exposure to typhoid infection while the throat is the important point to be protected when exposed to diphtheria infection.

Conditions Underlying the Spread of Infectious Diseases:—There are certain conditions upon which the spreading of infection depends. Park mentions five. First, the number of species of animals subject to infection. We know that many infectious diseases that occur in man are not found in animals, while certain diseases found in animals do not occur in man. Thus we know that measles, smallpox and typhoid fever, for example, do not occur in animals under ordinary conditions, while tuberculosis, hydrophobia, and some others are common to both man and beast.

Secondly, the spreading of an infection depends upon the quantity of infectious material and the manner in which it is thrown off from the body. In certain diseases, as diphtheria, typhoid fever, cholera, pulmonary tuberculosis, a large number of bacteria are thrown off by the discharges of the mouth and intestines and are, therefore, very dangerous. On the other hand, in certain infections like tuberculous peritonitis, relapsing fever, endocarditis, etc., there are very few bacteria thrown off and consequently there is little danger of infecting others.

Thirdly, infection depends upon the resistance of the infectious bacteria to the deleterious effects of drying, light, heat, etc. Here is where the ability of bacteria to form spores plays an important role. Spore bearing bacteria are, of course, more resistant to unfavorable conditions than the vegetative forms. However, such germs as tetanus and anthrax, which produce spores can withstand destruction a long time. Among those which do not produce spores some are very sensitive to their surroundings and therefore easily destroyed. Such are influenza bacteria, gonococci, the virus of syphilis, and hydrophobia. Others, like pneumococci, cholera, spirilla and glanders bacilli, are more resistant, while among the most resistant are diphtheria bacilli, typhoid and tubercle bacilli, and staphylococci.

Fourth, infection depends upon the ability or lack of ability to grow outside of the infected tissues. Fortunately, under ordinary circumstances such bacteria as pneumococcus, tubercle, influenza, diphtheria, glanders, and leprosy bacilli do not develop, as far as we know, outside of the body. Some may exceptionally develop in milk. Others, however, such as streptococcus and staphylococcus, typhoid and anthrax bacilli, cholera spirilla, and some others, may develop in some peculiar conditions existing in water or soil.

Fifth, spreading of infection depends upon the ability of bacteria to develop in or upon some portion of the skin or mucous membrane, either after or before the disease and without causing infection. This last point is important, as it accounts for the contraction of infectious diseases when no immediate source of contact may be known. For example, the superficial layers of the skin and the surface of the skin are inhabited by different pyogenic organisms. When, therefore, the skin is injured or a wound is inflicted, infection may follow from these organizations. In this way pustules in smallpox and the pus on a burned surface and in boils are the result of infection by organisms normally found on or in the skin. Stitch hole abscesses and wound suppuration is thus produced.

The secretions covering the pharynx and naso-pharynx (that is, the part of the pharynx immediately behind the nose) usually contain an abundance of bacteria.

According to Park, in New York City streptococci and staphylococci and pneumococci are found in almost every instance. There are few bacteria in the front part of the nose. Quite frequently the germs of meningitis and influenza are also present in the nose. Diphtheria bacilli are found in the naso-pharynx and pharynx of those who frequently come in contact with diphtheria patients.

Now, what does all this growth of bacteria as normally found on the surface of the skin and mucous membrane mean? It means that that these bacteria are waiting for an opportunity to enter the body. As soon as the body resistance is lowered or the skin or mucous membrane is injured, this opportunity is granted.

With these facts in mind we can readily see why a person on being suddenly chilled, as by submersion in cold water, may develop pneumonia. The pneumonia germs may be present in the mouth and respiratory tract but they are unable to enter the tissues of the body until the resistance of the tissues is lowered by the sudden chilling.

An Efficient Infants' Food.

Milk pasteurized or otherwise sterilized daily in small bottles of not more than 200 gm. capacity, to which is added one or more teaspoonfuls of acidogenous rennet, constitutes both a food and medicament for infants suffering from digestive disturbance. The acid medication obtained by the use of fermented milk is well tolerated, and is more effectual than that obtained by powders or tablets of lactic ferment in the dry state or by mineral acids. The coagulation of the casein commences in the bottle, and is more finely divided than that which occurs in the stomach after the administration of lab-ferment. The acidogenous ferments of rennet, moreover, produce in the bottle a partial peptonisation of the albuminoid contents of the milk, thus sparing the debilitated stomach. These ferments also stimulate quickly and effectively the digestive enzymes to greater secretive activity. The milk containing them is therefore useful in dyspepsia both of the stomach and intestines, and in cases of atresia and atrophy.

The success of the oatmeal diet has been one of the greatest puzzles in diabetes. The theory has been advanced that oatmeal starch has a distinctive composition which allows of its absorption in a way different from other carbohydrates. Another suggestion is that oatmeal contains some substance which favors carbohydrate oxidation either through stimulation of internal secretion or through an action like that of glutaric acid.

Stimulation of the intestines depends upon the irritation of the cellulose, distension due to food and the presence of acids. A vegetable diet stimulates the intestinal secretions, furnishes the material for the growth of bacteria which distend the intestines and increases the speed of the intestinal contents so that less water is absorbed.

Contrary to the oat diet, rice as a single form of carbohydrate and in suitable combination may be employed by the diabetic for more protracted periods; it may be prepared in a number of different ways and forms that prevent monotony and always furnish a palatable dish for the patient.

For a healthy infant, thoroughout the first year, the proteid percentage may range from 1.5 to three. The fat must be increased only when the infant is thriving; it should range from one to 3.5 per cent. As the use of maltose is less liable to induce an intoxication and as it has a favorable influence upon the weight, it is to be preferred to lactose.

The first great danger to which the new baby is exposed is hemorrhage from an improperly secured umbilical stump, and the second is infection of the umbilicus. To guard against the first, tape should be preferred to silk, as it is less likely to cut the vessels. To avoid the second, careful asepsis should be observed in tying and dividing the cord, and the stump should be immediately protected by a sterile cotton compress.

Hospitals and Sanitaria

Dental Clinics for Hospitals.

Hospital authorities are beginning to recognize the desirability of establishing dental clinics in connection with their dispensaries where the doctors on duty may refer cases whose teeth and gums require attention.

During the past year such clinics were started in the Grace Hospital, Detroit; the Sick Children's Hospital, Toronto; the General Hospital, Winnipeg; St. Vincent's Hospital, Staten Island, and the Mount Sinai and New York Hospitals of New York. Dr. Babcock reports that 96 per cent. of the public school children examined at the Grace Hospital were found to have defective teeth. The Department of Health of New York City will include in its departmental budget estimate for 1913 a request for the establishment of dental clinics for school children. Hospitals will be asked to co-operate in the establishment of these clinics, says the *Hospital World*.

The Department of Health proposes to provide dentists, nurses and equipment. The dispensaries will be asked to provide a suitable room, heat, light, power, cleaning and ordinary dispensary clinical service.

The Grace Hospital is working in conjunction with the Detroit Board of Education in the care and treatment of supposedly mentally defective children.

At Mount Sinai Hospital a special clinic has been established in the dispensary for the treatment of cases of specific vaginitis in children.

The New York Hospital began evening clinics for patients suffering with tuberculosis of the lungs. It was recognized that in many instances these patients feel reluctant about asking their employers for time off to attend clinics during working hours.

They can attend the night clinics without loss of time from their work, and without fear of being unjustly dismissed from their positions on account of suffering from a contagious disease.

The Hospital Superintendent.

It is well known that the majority of hospital superintendents when appointed have not had sufficient training to enable them to competently discharge the duties of office, said Dr. Thomas Howell at the recent meeting of the American Hospital Association.

A hospital superintendent does not need intellectual brilliance, but he does need practical experience. He should have at least a superficial knowledge of a great number of things, such as engineering, laundering, carpentering, painting, plumbing, bookkeeping, the purchasing, preparing and serving of foods, the admitting, assigning and discharging of patients, etc.

He must also have had training as an organizer and as an executive. These can be learned only by hard, patient work. If he has no knowledge of these things his officers and employees will show him little respect, and he will have an uphill fight to maintain discipline and order, and without discipline and order a hospital cannot be efficient.

The hospitals are training doctors and nurses who leave the institution just about the time they become useful. Why shouldn't they also train superintendents?

Those suffering from any interference with the free passage of air through the nostrils do not react well to cold air. Inflammatory conditions of the larynx and trachea may be subjected to additional irritation by cold air. Extreme cold is not desirable for those suffering from gout, arthritis or neuritis. For those suffering from advanced degeneration of any organ, for those advanced in years and for the very young extreme cold may be distinctly harmful.

Tuberculosis.

A very common type of tuberculosis in children is that involving the lymph glands, especially those situated about the bronchi. The general symptoms, anemia, emaciation, cough, angioneurotic edema, fever, tachycradia and the like, are suggestive, but not as conclusive as the physical signs: tenderness of the second to seventh thoracic vertebræ, circumscribed dullness at the sternoclavicular synchondrosis or posteriorly in the interscapular space with altered respiratory murmur, whisper bronchophony and increased pectoral fremitus over the areas of dullness. A cough suggesting pertussis, very high pitched, still more an expiratory dyspnea with expiratory râles, suggest compression of one bronchus by tuberculous glands.

Erythromelalgia.

Moleen (*J. A. M. A.*) states that the syndrome is seen in association with diseases of the spinal cord and peripheral nerves, but is occasionally seen in a pure form. It is often difficult to differentiate it from the neurotic edemas which it somewhat resembles. The pain in some cases would appear to be the result of disturbance in the peripheral nerves, the posterior roots or, possibly, the lateral columns of the cord, while in others the burning and aching might be due to mechanical irritation of the peripheral nerve-endings primarily. In the treatment, rest in bed has been in most severe cases already made necessary by the pain aggravated by the upright position. In view of the vasomotor theory in the production of vasoconstrictor paralysis, the apparent influence of suprarenal substance in my case would seem to add testimony and justify its use in plain or uncomplicated cases. Constitutional treatment is usually indicated to overcome the results of inactivity and confinement. A rubber bandage may at times render it possible for the patient to be on his feet with less discomfort and thus contribute to the betterment of his general condition.

Ligation in continuity of the external carotid should not be close to its origin. The proximal clot may extend into the common, and be swept through the internal carotid, to the brain.—(*American Journal of Surgery.*)

Army Medical Corps Examinations.

The Surgeon General of the Army announces that preliminary examinations for the appointment of First Lieutenants in the Army Medical Corps will be held on January 20, 1913, at points to be hereafter designated.

Full information concerning these examinations can be procured upon application to the "Surgeon General, U. S. Army, Washington, D. C." Applicants must be citizens between 22 and 30 years of age, graduates of a recognized medical school and must have served one year in a hospital after graduation.

In order to perfect all necessary arrangements for the examination, applications must be completed and in possession of the Adjutant General at least three weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There are at present thirty-five vacancies in the Medical Corps of the Army.

American Surgical Association.

The American Surgical Association has appointed a committee consisting of Drs. William L. Estes, South Bethlehem, Pa.; Thomas W. Huntington, San Francisco; John B. Walker, New York; Edward Martin, Philadelphia, and John B. Roberts, Chairman, 313 South 17th Street, Philadelphia, to report on the Operative and Non-Operative Treatment of Closed and Open Fractures of the Long Bones and the value of radiography in the study of these injuries. Surgeons, who have published papers relating to this subject within the last ten years, will confer a favor by sending two reprints to the chairman of committee. If no reprints are available, the titles and places of their publication are desired.

Treatment

THE ROLE OF EYE-STRAIN IN GENERAL PRACTICE.

A. S. Cobbledick discusses the association of eye-strain with certain nervous diseases. The types of eye-strain headaches are frontal and supra-orbital, frontal and occipital combined, occipital alone, and bi-temporal. The vertical headache of the neurasthenic and the intense diffuse headache of migraine are distinct from typical eye-strain headaches and sustain no close relation to such strain. Eye-strain may be an exciting cause of migraine but there is no constant connection. The freqeuncy of the attacks and sometimes their severity may be diminished by treatment of a refractive or muscular balance error, while in a small percentage of cases cure results. The dull headaches which migraine patients are subject to between attacks can always be cured by appropriate lenses. Epilepsy may be cured or relieved by the use of lenses. One can quite understand a motor cortex in such a borderland state of instability as to break down with any peripheral nervous irritation, such as an eye-strain, and when eye-strain is the only source of irritation one might expect relief from its correction. Even a few successes make it well worth while to investigate the refraction and muscular balance of all cases of the functional neuroses, for if cure is only occasional some measure of relief is quite common.

There is a class of cases whose symptoms consist of extreme nervous irritability and change of temper, headaches, and occasionally vertigo, without other symptoms of neurasthenia. This symptom-complex is usually ascribed to functional liver derangement. These cases can be cured by attention to the refractive errors and not by purges. True neurasthenics nearly always present some symptoms of eye-strain. Accommodation is apt to be an effort for them, inasmuch as the muscles of convergence participate in the general condition of myasthenia. The vertical headache, the peculiar sensations of oppression, pulsation and band-like constrictions of the head, have no relation to eye-strain. The other types of headaches, if present, can be relieved by lenses. Eye-strain can hardly be regarded as *the* cause of *well-marked* neurasthenia though it may operate along with other factors. It may be the main factor in slight cases of neurasthenia in which there is a good family history. These cases are cured by wearing lenses. Neurasthenia is practically always relieved by the correction of existing refractive errors. The same thing applies to such a serious class of cases as the definite melancholias, with or without suicidal tendency.

In children we note dislike of near work, *i. e.*, discomfort on accommodation resulting in inattention at school. Their school reports say that such children are quick and intelligent, but inattentive and unable to concentrate attention upon their work. The correction of the eye-strain often affects such children's standing in their classes quite magically. Many of these cases are also complicated by the presence of adenoids.

Many of the functional neuroses in children are very much improved by correction of refraction errors, *e. g.*, grimaces, frequent blinking, shutting one eye, stammering, and nervousness and irritability. The extremely nervous and irritable children are pretty apt to have post-nasal growths.—(*The Practitioner*, Nov. 5, 1912.)

Vaccines in the Treatment of Pertussis.

Maynard Ladd, of the Harvard pediatric department, reports some interesting results from the use of a vaccine made from the organism of Bordet. This organism was discovered in 1905 by Bordet and Gengou. While not universally recognized, the identity of Bordet's bacillus as a causative factor of whooping-cough is fairly well established. The strongest evidence of this is the agglutination and complement fixation reactions first observed by Bordet and afterward confirmed by numerous investigators. In preparing the vaccine the organisms are grown on blood agar in the incubator for twenty-four hours. The growth is then washed off with sterile physiologic salt solution and a bacterial count is made to determine the number of organisms per cubic centimeter after the blood cell method of Wright. The organisms are then killed by heating in a water bath at a temperature of 60° C. for one hour, and the emulsion is diluted with physiologic salt solution to the desired bacterial content per c.c. Bacterial tests are then conducted, including safety tests on guinea pigs. The cases treated were clinically typical. The injections were made at intervals of from five to ten days—occasionally longer. There were no general symptoms nor local reactions. The beginning dose should be 40,000,000. Probably considerably larger doses should be given during the course of the disease. No other treatment was given in the series reported. After three injections the number and severity of the paroxysms diminished. The children recovered on an average in five weeks after beginning treatment. On an average the cases were in the third week of the disease when the vaccines were started. Ladd feels encouraged by his results to make further trial. His report is based on fifteen cases.—(*Archives of Pediatrics*, August, 1912.)

Hyperthyroidism.

MacDonald says that in the treatment of hyperthyroidism, the first principle must be to secure a subsidence of the oversecretion of the gland. Various drugs have been mentioned and employed with varying success by various physicians, but as yet no specific remedy has been found. Theoretically, serum therapy should produce the desired results, but as yet nothing along this line has been discovered which has produced the slightest benefit.

In view of the fact that but a small percentage of cases of this nature are cured by medicinal means, and the improvement in the condition experienced by the same therapy is not sufficiently great to warrant much hope for the future, it would appear that surgical interference in selected cases must be the treatment of the future. Cases treated medically make at the best but unsatisfactory progress, while *selected* cases treated by the surgical procedures of to-day are *cured*.

In the surgical treatment of hyperthyroidism two distinct methods are practised, according to the severity and stage of the disease—ligation of the superior thyroid vessels, and extirpation of the gland. These two procedures are rapidly becoming recognized by the medical profession as the most scientific and safe methods of treatment, and the results being obtained to-day fully justify these conclusions.

Immediately after the operation the patient should be propped up in bed at an angle of 45° and the head kept immovable with pillows. This is to assist proper drainage, a necessity in these conditions. Serious symptoms often follow thyroidectomy, such as great muscular twitching and increased rapidity of the heart's action. The former may be controlled by scopolamin in doses of from 1-200 to 1-100 in severe cases, while for the latter adrenalin may be given with caution, and in cases of extreme heart weakness camphorated oil in 15 minim doses may be given hypodermically every 15 minutes until beneficial results are obtained.

Probably the most useful post-operative treatment and that which should be used in every case is the administration of normal saline solution, given by the continuous method, though should any diarrhœa be present, or for any reason the saline not be retained, it may be given subcutaneously. The chief benefit to be derived from this salt solution is in the fact that it delays absorption, one of the most potent dangers following thyroidectomy in hyperthyroidism.

No solid food should be allowed for some days, while on the other hand fluids in large quantities should be given, consisting mainly of hot water, tea, egg albumen and such drinks. The drainage tube should be removed on the second or third day at most, according to the amount of discharge. The stitches may be removed with safety on the fourth day. An aperient should be administered on the second day, and in all but the most serious cases the patient may be allowed to sit out of bed any time after the third day.—(*Canadian Practitioner.*)

Hot Air for Diphtheria.

Rendu is a believer in the hot air treatment for diphtheria. He finds the Loeffler bacillus is killed by a temperature of 176° F. (80° C.) under exposure for one minute, whereas the bacillus of tuberculosis is only killed after an exposure to 212° F. of heat for more than two hours. The purpose of the heat is to supplement the work of antitoxin. Discussing this matter, he says:

"The bacillus develops only at the top of the respiratory passage, where it finds favorable conditions of growth—a current of air, a temperature (which it prefers) of 35°-37° C., and darkness, which increases its virulence. It clings to the surface of the membrane, where it can easily be reached. But can the throat support a temperature of 80° C. unharmed? Rendu's conclusion is affirmative. He found that the bacillus was killed at a higher or lower degree, according to time of exposure, as shown in the following table:

50° C.	15 minutes'	exposure required
60° C.	10 "	" "
70° C.	2 "	" "
80° C.	1 minute's	" "

"Experimenting first on himself and then on others, Rendu proved that many subjects can be exposed for 10 minutes to air at 100° C. with no more injury to the mucous membrane than to the skin. Rendu first tried inhalation on himself, finding 100° C. for 2 minutes perfectly supportable. Sixty degrees C. could be well supported for half an hour or more. The method has been tried on various patients—a five-minute exposure at 80° C. meeting with full success."—(*Bib. Univ. et Revue, Suisse.*)

Erysipelas of the Face.

In this condition Castaigne and Fernet believe ichthyol is most useful when mixed with equal parts of traumaticine and swabbed over the affected part three or four times a day, the application to be continued for forty-eight hours after all local symptoms had disappeared. Ichthyol may be applied pure, diluted with half its volume of boiled water, freely bathing the parts every day or twice a day. As it dries it forms a thick scab, thus rendering the use of successive dressings unnecessary. When all active symptoms have subsided it may be applied in an ointment. In the case of severe inflammation with oozing and suppuration it is better, for the first twenty-four or forty-eight hours, to apply dressings moistened with a 1 in 10, or 1 in 20 solution, applying the pure ichthyol at a later stage. In an ointment it is not so active, and should only be used in cases with little inflammation.

℞ Ichthyolis ..... ʒss
Zinci Oxidi ..... ʒij
Adepis Lanæ ..... ʒij
Paraffini Mollis.....ad ʒi
Misce. Fiat unguentum.

This is an excellent application when inflammation has disappeared. It should be used while redness persists, or the following cream may be substituted:

℞ Amyli ..... ʒj
Zinci Oxidi ..... ʒij
Adipis Lanæ,
Paraffini Mollis.....ana ʒij
Liquorisi Hydrogeni Peroxidi..... ʒss
Misce. Fiat cremor.

Should any telangiectasis persist the following ointment will be found more effective:

℞ Solutionis Ardrenalini Chloridi (1/1000)..... ʒss
Zinci Oxidi ..... ʒij
Adepis Lanæ ..... ʒij
Paraffini Mollis.....ad ʒi
Misce. Fiat unguentum.
—(*Journ. de Méd. et de Chir. prat.*)

Tuberculosis of the Larynx.

Von Ruck reaches these conclusions:

1. Tuberculous changes are present in the larynx of patients suffering from pulmonary tuberculosis much more frequently than is generally recognized.

2. The disease in the larynx in its early stages causes, as a rule, no definite or but slight subjective symptoms.

3. For this reason the physical examination of every tuberculous patient should include as much as a matter of routine, the inspection of the larynx as an examination of the chest.

4. Slighter degrees of thickening of the mucosa which many observers are willing to accept as catarrhal are not infrequently tuberculous in nature, and may well suggest to the laryngologist who notes them in the course of his routine practice, the propriety of a physical examination of the chest.

5. The prognosis of tuberculosis of the larynx in the earlier stages in no worse than that of the disease in the lungs.—(*N. Y. Med. Jour.*)

Hexamethylenamine in Skin Diseases.

Cornelius R. Love of Brooklyn discusses the value of hexamethylenamine in those skin diseases associated with intestinal disturbance, as rosacea and acne, particularly of the indurata variety. He has had very gratifying results. The method is as follows: Faulty hygienic conditions are corrected and sugar and starch are interdicted for awhile, also salt. A quart of buttermilk is added to the diet and a quart of water is to be drunk. From five to seven grains of hexamethylenamine are given every four to six hours, well diluted. The drug should be continued for a month or six weeks. If it irritates the bladder reduce the dose and dilute it more highly. Local cosmetic treatment may be employed if desired. Some of the old chronic cases relapse after the treatment is stopped but show prompt improvement upon resumption. While the action of the drug is probably chiefly dependent upon its intestinal effects, yet there would also seem to be some local effect upon the skin itself.—(*Am. Jour. Dermatology,* May, 1912.)

Crude Investigations in Medicine.

Beverley Robinson, of New York, writes wisely upon crude investigations in medicine and where they lead. Almost every week something new or startling appears in the medical press, regarding research discovery. The new things are eagerly adopted by many and well tried methods with good records are put aside with scarcely a thought, until they are finally lost sight of entirely, or if still made use of by a few may again be revivified as fresh discoveries. Leeches and blisters, opium internally for many distressing complaints, and antimony in pneumonia, are examples of ancient and eminently useful things that are now in partial eclipse. The scientist is always searching for specific causes of disease and is not much interested in the empirical relief of symptoms. Yet as a matter of fact we are ignorant of many causes and as empiricists must act. The pure scientist has not much sympathy for this sort of practice, which he sometimes even considers in the light of wrong doing or of ignorance. Thus it may be said that the scientist sometimes handicaps the physician —perhaps we should say the ultra-scientist. We should not abandon useful and innocent remedies of long standing, and judicious, wise conservatism, merely because the pressure of fanciful schemes of treatment, more or less hastily devised by

enthusiasts or seekers for notoriety, is so great. Medicine is not an exact science (nor ever can be) and there is a disposition, especially on the part of some surgeons, to take too much advantage of the fact in their explorations and other activities, though the fact remains that rational empiricism is, or ought to be, an indispensable, respected and understood system of practice, as much justified to-day as ever before. One explanation of the wide extent of quackery is the fact of imperfect research work and unwarranted conclusions deduced therefrom. The practice advertised by these men is followed for a time by many honest practitioners who wish solely to help cure, or relieve, their patients, and later given up in sheer disgust because found worthless, or not nearly so useful as older remedies. Frequently indeed they do much harm physically as we know, not to speak of the loss of faith and hope thus engendered. No amount of research and science, even the best, can wholly compensate for wise empirical knowledge, so-called, of observing, all around practitioners of large experience. Nor except in few diseases is it clear that much has been attained practically, through research, for the cure of disease, acute or chronic, during the past two or three decades. The fact is that the new experimental science has brought with it many problems of intense interest and possibly of great and lasting value, if solved correctly, but their importance to the race, indeed to humanity everywhere, must largely depend upon the influence of the broad, judicial mind which is now, more than ever, required to separate wheat from chaff—always in the best interests of fellowmen and women. To whom, then, does the highest role pre-eminently belong? To none so truly and beneficently as to the mature, wise practitioner who stands at the very top, and who like Moses on Mount Pisgah gazes at the promised land beyond.—(*Amer. Medicine,* July, 1912.)

Asthma in Children.

J. Comby records (*Arch. de méd. des enf.*) seventy-five cases in children, in fifty-six of whom the attack started in the first three years of life. Forty-three were boys, thirty-two girls. In twenty-one there was asthma in the parents, in sixteen in the grandparents, and in three in the great-grandparents. The ascendants or collaterals frequently showed signs of arthritism, under which term are included migraine, diabetes, gout, obesity, gravel, eczema, neuralgia, etc. Familial asthma occurred in three cases. In two pairs of twins one child was affected with asthma, and the other was free from it. Infantile eczema had preceded asthma in twenty-eight cases, thus illustrating the close connection between two manifestations of the arthritic diathesis. True asthma is never caused by nasal affections, adenoids or glandular tuberculosis. The exciting causes of asthma are numerous, such as chill, fatigue, violent games, emotion, or acute disease. The onset is insidious. In some children the attack is characterised by violent and repeated sneezing (nasal asthma). Many nervous or arthritic symptoms may be associated with infantile asthma, *e.g.* laryngismus stridulus, spasm of the glottis, convulsions, obesity, urticaria, and oxaluria. The first attack is difficult to diagnosis. Broncho-pneumonia almost always suggests itself, but fever is absent or slight, and in twenty-four hours the child is out of danger. Other diseases which must be eliminated are spasm of the glottis, laryngismus stridulus, and stridor due to an enlarged thymus. The prognosis of asthma in children is not so grave as in adults. As the child grows up the attacks become less frequent and disappear entirely at puberty or in adult life. Complications, *e.g.* emphysema, bronchiectasis or chronic bronchitis are rare. Treatment consists in application of mustard plasters and dry cups, and sedatives, such as opium, belladonna, or aconite. Dover's powder is recommended, also change of air, vegetable diet and arsenic potassium iodide and sulphur.—(*Brit. Jour. Dis. Children.*)

Treatment of Toxemia and Bacteremia.

R. Labusquiere (*Ann. de gyn. et d'obst.,* June, 1912) calls attention to the pathological importance of the anaerobic bacteria in puerperal processes. Saprophytic bacteria may, under various circumstances, become markedly virulent, and the anaerobic especially multiply in the system, and live in the blood. In cases of putrid abortion aerobic streptococci are not the agents of the putrefaction; they may be met with in the secretions but associated with aerobic germs, which are the true cause of the putrefaction, such as the colon bacillus and aerobic streptococci. Here there is a true infection, and the fever is in proportion with the number of germs present. Schottmuller advises immediate evacuation of the uterus. On the other hand, Winter believes that active treatment causes great risk, as it causes migration of the germs into the blood. A rational treatment would be the administration of Echtisia, which furthers internal antisepsis and reduces the fever. Echtisia inhibits the growth of virulent bacteria in the blood and restores a healthy condition of the lochia and the blood.

Observations of Pruritus Ani: Its Probable Etiologic Factor and the Results of Treatment.

Dwight H. Murray, of Syracuse, advances the theory that pruritus ani finds its dominant cause in infection of the anal skin by streptococci. He believes that the text-books will have to modify and rewrite the etiology and treatment of this disease as now given by them, and that skin infection must become the keynote of all the persistent cases. There need not be gross lesions, such as fistula, cryptitis, proctitis, ulcer, hemorrhoids, etc., present in chronic pruritus, though they may have been concerned with the primary infection. All these conditions may exist and yet no pruritus accompany them. The skin must be infected in order that the pruritus be set up. The streptococci may be demonstrated in the superficial layers of the skin and disease responds to vaccine therapy. At the present stage of this new work it is impossible to tell the patient how many treatments he must take. Relapses must be treated and finally complete immunity is established and the cure is permanent. A concentrated vaccine is made by transferring a colony from the Petri plate and allowing it to grow on slant agar for twenty-four hours. Wash it off with an average 1 c.c. sterile salt solution, drain into a homeopathic phial through cheese cloth, add an equal volume of 1 per cent. carbolic acid solution, then allow it to stand at room temperature twenty-four hours before using. The streptococcus fecalis has been found most frequently to be the causative factor. Two to four minims of this autogenous vaccine are used for the first injection. If no reaction occurs within twenty-four hours give double the dose the next day; otherwise wait until it has subsided. After using both arms and both groins, we begin again with the left arm and alternate in the same way. Improvement follows the first severe reaction, which consists of local redness and swelling together with malaise, headache and sometimes moderate fever. The reaction disappears in twenty-four hours. Improvement is accompanied by a decrease in the number of streptococci in the cultures. Phagocytosis increased for streptococci is noted. When the pruritus disappears the streptococci disappear also. Murray has given so many of these vaccine injections with marked benefit that he does not look upon the treatment as experimental. Stock vaccines will not do at all because the streptococci in them are the pyogenes instead of the fecalis. One of the statements made by most authors is that in the absence of any palpable lesion of the parts the disease is a neurosis. Murray does not agree with this, but believes that the neurosis may easily be the result of the pruritus.—(*International Journ. of Surg.,* August, 1912.)

Do not give alcohol in the infectious diseases. It is particularly bad in pneumonia and septic conditions.

The Physician's Library

A Text-Book of Obstetrics: Including Related Gynecologic Operations. By Barton Cooke Hirst, M. D., Professor of Obstetrics in the University of Pennsylvania. Seventh Revised Edition. Octavo of 1,013 pages, with 895 illustrations, 53 of them in color. Cloth, $5.00 net; half morocco, $6.50 net. Philadelphia and London: W. B. Saunders Company, 1912.

No more comprehensive book on obstetrics and gynecology has ever been written in English and its popularity is attested by the publication of seven editions. Hirst believes that as most gynecologic conditions are attendant upon the consequences of motherhood, they should be an integral part of a work on obstetrics. This logical view gives the book greatly added value.

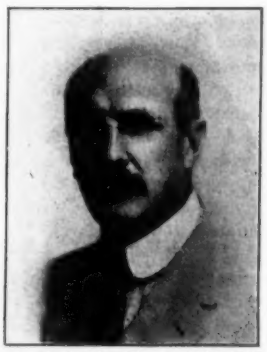
Great practicability, clearness of expression and simplicity in detail characterize the contents of this volume and make it indispensable to the physician. A wealth of exceptionally good illustrations add to the value.

Internal Medicine. By David Bovaird, Jr., M. D., Assistant Professor of Clinical Medicine in the College of Physicians and Surgeons of Columbia University. Cloth. 618 pages, with 116 illustrations. Price, $5.00 net. Philadelphia and London: J. B. Lippincott Company, 1912.

It would be but natural that so careful a clinical observer as Bovaird would show especial care in the preparation of a work on medicine. A diagnostician of great skill and a physician of unusual skill in the treatment of disease, he has written a text-book which possesses every essential. In a clear, lucid style, the author has told the fundamental facts concerning the subject without the verbiage which characterizes so many works on medicine, at the same time divorcing the book from any semblance of compendiumism. Bovaird in his foreword aptly notes that the object of his labors is to "supply the framework of internal medicine."

We can especially commend the grouping of the diseases. While Bovaird's classification differs in some respects from that of other authors, his reasons are logical.

The author has availed himself of the camera to a considerable extent and the excellence of the many photographs adds materially to the value of the contents. The book is a tribute to the printer and is a splendid presentation of a great subject.



John Fairbairn Binnie, A.M., C.M.

John Fairbairn Binnie, A. M., C. M., is probably best known by his work on Operative Surgery, now in its fifth edition. He is professor of surgery in the medical school of the University of Kansas, Surgeon to the Kansas City General Hospital, and is a fellow of the American Surgical Association and a member of the International Society of Surgery. His book has recently been reviewed in these pages.

Progressive Medicine. A quarterly digest edited by Hobart A. Hare, M. D., and Leighton F. Appleman, M. D., of Jefferson Medical College. Vol. XIV., No. 3. Paper. 350 pages. Price, $1.50 ($6 per annum). Philadelphia and New York: Lea & Febiger, 1912.

This number, like its predecessors, contains much of value. The reviews of the diseases of the thorax and its viscera by Ewart, of obstetrics by Davis, and of diseases of the nervous system by Spiller, are thorough and helpful. Gottheil's review of dermatology and syphilis is not up to the usual standard set by this splendid digest.

Anatomy and Physiology for Nurses. By Elizabeth R. Bundy, M. D., of the Woman's Hospital of Philadelphia. Second edition. Cloth. 335 pages with glossary and 215 illustrations, 42 in colors. Proce, $1.75 net. Philadelphia. P. Blakiston's Son & Co., 1912.

The fundamentals of anatomy and physiology are carefully set forth in the book. The author has chosen the most important features of the subject and with the assistance of excellent illustrations, many of them in colors, has presented a story of the minutiæ of anatomy which is entirely sufficient for the practical purposes of the nurse.

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W. M. Late Coplin. M.D.

W. M. Late Coplin, M. D., is Professor of Pathology in Jefferson Medical College, Philadelphia and is one of the best known pathologists in the country. In addition to his work as director of the pathological laboratories of Jefferson Medical College Hospital, Dr. Coplin is pathologist to the Philadelphia Hospital and to the Friend's Asylum for the Insane. His Manual of Pathology, now in its fifth edition, is standard and is widely used.

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Principles of Hygiene. For Students Physicians and Health Officers. By D. H. Bergey, M. D., First Assistant, Laboratory of Hygiene and Assistant Professor of Bacteriology, University of Pennsylvania. Fourth edition thoroughly revised. Cloth. Octavo of 529 pages, illustrated. Price, $3.00 net. Philadelphia and London: W. B. Saunders Company, 1912.

The growing importance of hygiene has rendered such a book necessary and although Bergey disclaims any attempt to prepare an exhaustive text-book, he has covered the ground with more care and thoroughness than is usual in the less elaborate works.

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The Care of the Body. By Prof. R. S. Woodworth of Columbia University. Cloth. 359 pages. Price, $1.50 net. New York: The Macmillan Company, 1912.

This is a little treatise on physiology and hygiene, written in a pleasant, chatty style, which robs those subjects of their dry features. Enough anatomy is interjected to make the subject one of real interest. We can imagine that a young man (the book is intended for young men) might sit down and pore over its pages with absorbing pleasure. It contains a vast amount of useful knowledge about the body and its functions. Delving a little into the realm of bacteriology, the author discusses the cause of disease of bacterial origin. The knowledge this book contains is of the most useful nature and if the class of people for whom the book was written would read and profit thereby, mankind would be far better.

(*Continued on p.* 20)

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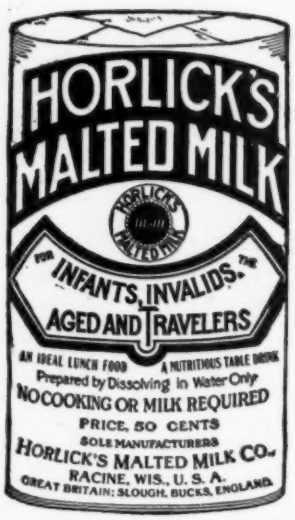

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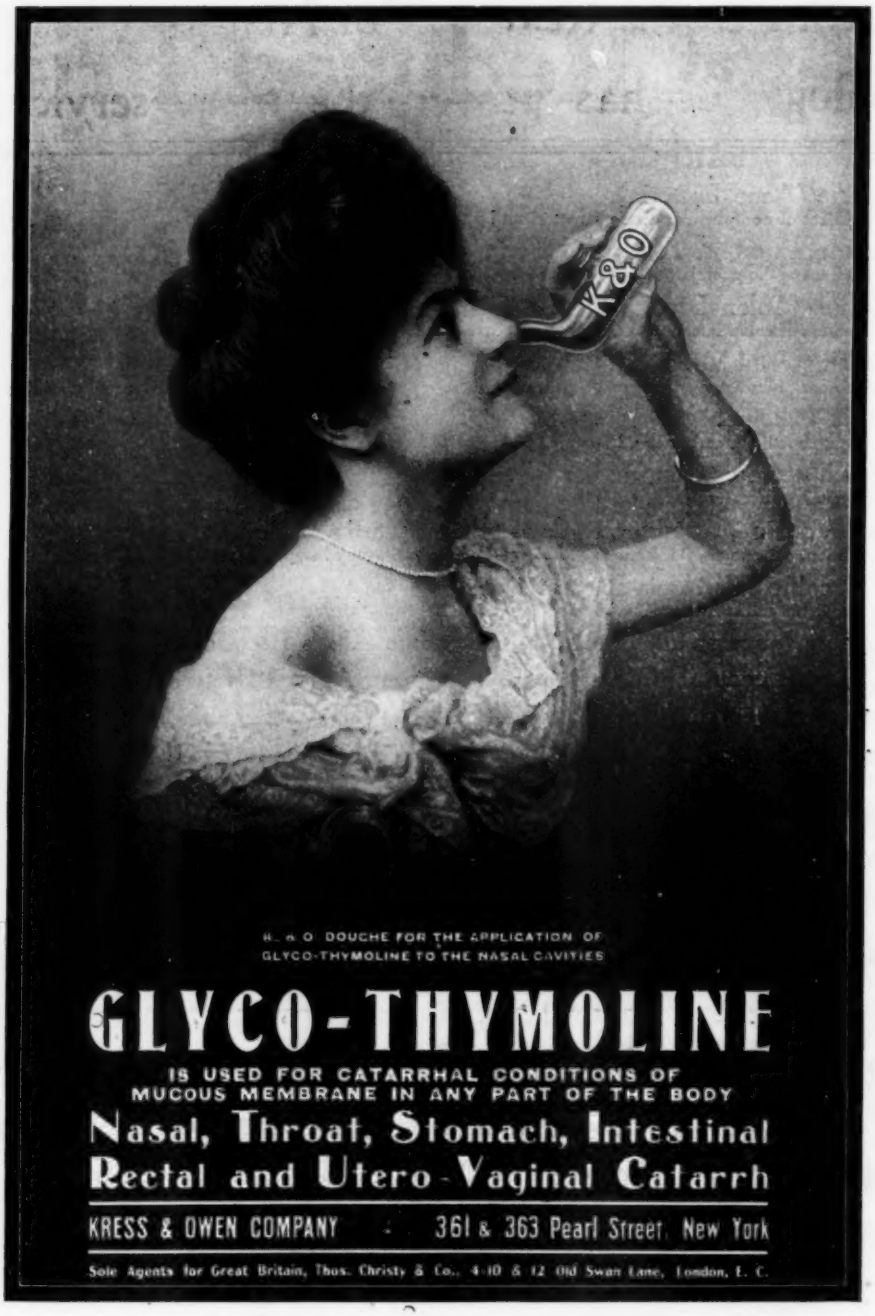
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GLYCO-THYMOLINE TO THE NASAL CAVITIES
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IS USED FOR CATARRHAL CONDITIONS OF
MUCOUS MEMBRANE IN ANY PART OF THE BODY
Nasal, Throat, Stomach, Intestinal
Rectal and Utero-Vaginal Catarrh
KRESS & OWEN COMPANY · 361 & 363 Pearl Street, New York
Sole Agents for Great Britain, Thos. Christy & Co., 4-10 & 12 Old Swan Lane, London, E. C.

"remember it should be moist and it should be hot" was the final dictum of a well known Neurologist in referring to the treatment of Neuritis.

Antiphlogistine has proven the most serviceable, satisfactory and convenient form of utilizing heat and moisture as a therapeutic agent and since heat must be continuous to be effective, the advantages of this well known product are forcibly apparent.

It holds its thermic value for hours without subjecting the patient to the annoyance and danger of exposure by frequent dressings.

Heat by encouraging Leucocytosis and Hyperemia, as well as reducing stasis in the part to which it is applied, indicates the employment of Antiphlogistine in the following inflammatory conditions:

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Abcesses, Adenitis, Boils, Bronchitis, Bubos, Carbuncle, Cellulitis, Epididymitis, Inflammatory Rheumatic Joints, Intercostal Neuralgia, Lumbago, Lymphangitis, Mastitis, Myalgia, Orchitis, Ovaritis, Paronychia, Parotitis, Pharyngitis, Phlegmon, Pleuritis, Pneumonia, Prostatitis, Quinsy, Sprains, Synovitis, Tendo-synovitis, Tonsillitis and Uterine Inflammation.

Antiphlogistine should be applied thick and hot and well protected by suitable covering.

IN INFANT FEEDING WHERE THE QUALITY OF NATURE'S SUPPLY IS NORMAL, BUT QUANTITY DEFICIENT

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Affords an Ideal Alternating Food and is a Valuable Adjunct to Mother's Milk.

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TO ANY DOCTOR'S PRACTICE ARE REMEDIES UPON WHICH HE CAN PIN HIS FAITH

Duty to himself and to his patient demands dependable remedies and in Gynecological and Obstetrical conditions such as **Dysmenorrhea, Amenorrhea, Menorrhagia, Metrorrhagia, Rigid Os, Threatened Abortion** and **Postpartum Hemorrhage.**

Hayden's Viburnum Compound

has firmly established itself in the mind of every physician who has given it a trial, as a most dependable uterine sedative and anodyne.

From a clinical view point it has attained merited success and received the approbation of no less an authority than J. Marion Sims.

It is the original Viburnum product and as a trial is the most convincing argument of its efficiency, let us send you a sample of H.V.C. for clinical observation.

SUGGESTION: Combine HAYDEN'S VIBURNUM COMPOUND with boiling water and administer as hot as possible.

NOTE that the genuine H.V.C. and not a substitute is given upon prescription.

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In Rheumatism and Gouty Disorders, HAYDEN'S URIC SOLVENT has proven of inestimable value

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The Mulford Bacterins

The Mulford Bacterins (Bacterial Vaccines) for **therapeutic use** are supplied in packages containing **4** aseptic, glass syringes, ready for immediate use, labeled A, B, C and D, respectively.

The number of killed bacteria contained in syringe B is double the contents of syringe A; syringe C is double the contents of syringe B; syringe D is double the contents of syringe C.

Each syringe is graduated into fifths, so that any divided dose of the contained bacterin may be instantly measured.

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(Bacterial Vaccines)

Acne Bacterin (Acne Vaccine) in **4** syringes. A contains **25,** B **50,** C **100,** D **200** million killed bacteria.
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Neisser Bacterin Mixed (Gonococcic Vaccine Mixed). See price-list for bacterial contents.
Pneumo-Bacterin (Pneumococcic Vaccine) in **4** syringes. A contains **50,** B **100,** C **200,** D **400** million killed bacteria.
Pneumo-Bacterin Mixed (Pneumococcic Vaccine Mixed). See price-list for bacterial contents.
Scarlatina Bacterin (Scarlet Fever Vaccine) in **4** syringes. A contains **50,** B **100,** C **200,** D **400** million killed bacteria.
Staphylo-Bacterin (Staphylococcic Vaccine) in **4** syringes. A contains **250,** B **500,** C **1000,** D **2000** million killed bacteria.
Staphylo-Bacterin Mixed (Staphylococcic Vaccine Mixed). See price-list for bacterial contents.
Staphylo-Acne Bacterin (Staphylo-Acne Vaccine). See price-list for bacterial contents.
Staphylo-Albus Bacterin (Staphylo-Albus Vaccine) in **4** syringes. A contains **250,** B **500,** C **1000,** D **2000** million killed bacteria.
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PRICE.—Therapeutic package, 4 syringes (A, B, C and D) to each pkg. $2.00
Single "D" syringes of any Bacterin 50

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Meningo-Bacterin (Meningococcus Vaccine) in **3** syringes containing **500, 1000, 1000** million killed bacteria.
Scarlatina Bacterin, immunizing, (Scarlet Fever Vaccine) in **3** syringes containing **250, 500, 1000** million killed streptococci.
Typho-Bacterin, immunizing, (Typhoid Vaccine) in **3** syringes containing **500, 1000, 1000** million killed bacteria.
Typho-Bacterin Mixed (Typhoid Vaccine Mixed). See price-list for bacterial contents.

PRICE.—For Immunizing and Prophylactic Use (3 syringes to pkg.) $1.50

H. K. Mulford Co., Chemists, Philadelphia

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Fellows' Syrup of Hypophosphites

Its distinctive characteristics are:

Uniformity of Composition,
Freedom from Acid reaction,
Stability in vacuo,
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Pre-eminence in arresting disease.

Reject < **Cheap and Inefficient Substitutes**
Preparations "Just as Good."

THE
STOMACH
WEAKENED BY DISEASE
EASILY and with the LEAST EXERTION
TAKES UP and DIGESTS

TROPHONINE

BECAUSE IT CONTAINS
the NUCLEO-ALBUMINS & NUCLEO-PROTEIDS
The HIGHEST NOURISHMENT ·
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WILL SHOW ITS VALUE ·
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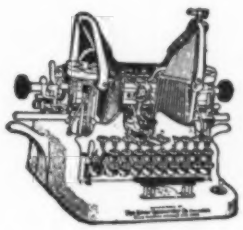
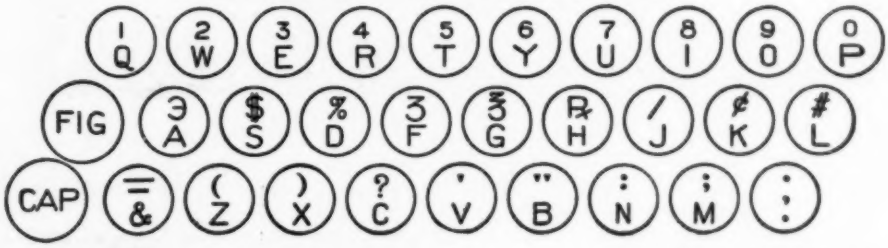
To meet the urgent need of the medical profession for a typewriter adapted to both *general correspondence* and accurate *prescription writing* and other medical work, we have perfected The Special Medical Oliver Typewriter.

This remarkable special machine is offered at the price of the regular model and on the convenient 17-Cents-a-Day Purchase Plan, which has proved so immensely popular. Note how completely the special keyboard meets every requirement.



The Oliver Medical Keyboard



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Typewritten prescriptions give the druggist less chance for mistakes than penwritten prescriptions.

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at the onset of the bronchial type, rapid relief usually follows the use of our

Soluble Hypodermic Tablets of

Morphine nitrate, - -	**1/20 gr.**
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Often one tablet jugulates the attack.

Use it subcutaneously or by the mouth.

When and where shall we send your free sample?

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A hygienic hotel—no dust trap carpets, but oriental rugs in all rooms and corridors. Only New York Hotel with window screens throughout.

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Gout, Acute or Chronic, and other Inflammatory Articular (*rheumatism*), Cutaneous (*pruritus, eczema*), Ocular (*iritis, episcleritis*), Aural (*otoscleritis*) and Neuralgic (*neuritis, sciatica*) Affections

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Disturbed Uric Acid Metabolism

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FURNISHED IN BOXES OF 20 TABLETS, EACH 7½ GRAINS.

DOSE:—30 to 45 grains (4 to 6 tablets) per day, taken after meals. Each tablet must be allowed to disintegrate in a tumblerful of water and the substance swallowed in suspension.

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rarely fail to respond with gratifying promptness to the tonic action of

CACTINA PILLETS

The benefits obtained in arrythmia, tachycardia and the irritability attending cardiac fatigue or nervous derangement show that Cactina is a tonic and support—not a spur—to the heart's action.

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can be often relieved and overcome by

PRUNOIDS

when all other measures have been "tried and found wanting."

Prunoids act by stimulating natural functions, and, in consequence, are notably free from the drawbacks of usual cathartics.

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invariably calls for the use of an active secernent. Few measures at the command of the physician are as effective in this direction as

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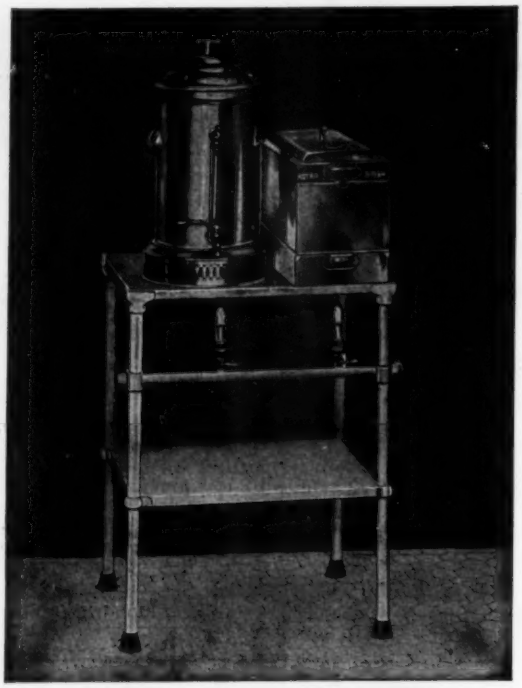
The all important feature that has given this remedy its great popularity in the "functional dyspepsias" is the fact that it restores and reinforces physiologic processes — never supplants them.



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These Outfits are made in three forms, Two Piece, Three Piece, and Four Piece Outfits. Each form is made in three sizes. The Hospital Size is designed for where there is a large amount of operating; the Physicians' Size is adapted for Physicians' offices; the Specialists' Size is still smaller.

The separate sterilizers are made of copper, with a polished or nickel plated finish. The interiors are lined with pure block tin. The stands are wrought iron, white enameled. The high class of workmanship is in keeping with the quality of the materials, making Castle Outfits exceedingly durable.

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Manufacturers of Pressure and Non-Pressure Sterilizers For All Purposes

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The Marvel Syringe

WAS AWARDED THE

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As the latest and best syringe invented **to thoroughly cleanse the vagina. The MARVEL,** by reason of its peculiar construction **DILATES and FLUSHES** the vaginal passage with a volume of whirling fluid which **SMOOTHS OUT THE FOLDS** and **PERMITS THE INJECTION TO COME IN CONTACT WITH ITS ENTIRE SURFACE,** instantly **DISSOLVING** and **WASHING OUT** all **SECRETIONS** and **DISCHARGES.**

Physicians should recommend the **Marvel Syringe** in all cases of **Leucorrhoea, Vaginitis** and **all womb troubles,** as it is warranted to give entire satisfaction.

All Druggists and Dealers in Surgical Instruments sell it

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GLYCO-HEROIN (SMITH)

AN ABSOLUTELY STABLE AND UNIFORM PRODUCT THAT HAS GAINED WORLDWIDE DISTINCTION THROUGH ITS DEPENDABLE THERAPEUTIC EFFECTS IN THE TREATMENT OF

COUGH, BRONCHITIS PERTUSSIS, PNEUMONIA, PHTHISIS AND ASTHMA

¶Glyco-Heroin (Smith) affords unvarying results that can not be expected from extemporaneously prepared mixtures obtained through ordinary sources. This fact is demonstrated by the extensive use of Glyco-Heroin (Smith) by physicians in their practise.

¶Glyco-Heroin (Smith) is supplied to druggists in sixteen-ounce dispensing bottles. The quantity ordinarily prescribed by physicians is two, three or four ounces.

¶DOSAGE—The adult dose of the preparation is one teaspoonful, repeated every two hours or at longer intervals, according to the requirements of the individual case. For children of ten or more years, from one-quarter to one-half teaspoonful. For children of three or more years, from five to ten drops.

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in the use of the bromides is often as dependent on the *avoidance of untoward effects* as on the *attainment of maximum physiologic activity*. For this reason

PEACOCK'S BROMIDES

offer the most satisfactory bromide therapy; not only does this happy combination of carefully selected bromide salts insure all the benefits of the most active bromide preparation, but it does so with the great advantage that gastric disturbance and all tendencies to "bromism" are reduced to a minimum.

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is unquestionably often responsible for an unlimited train of intestinal and systemic ills. To arouse the activity of the liver, however, without disagreeable and dangerous catharsis is a difficult problem, unless the practitioner uses

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Experience has shown that this remarkable remedy is capable of exerting a pronounced cholagogue action that is entirely physiologic in character. The bowels in consequence, only receive the natural—and desirable—stimulation incidental to increased hepatic action.

The advantages of Chionia are obvious, therefore, in a wide variety of hepatic, gastro-intestinal and auto-toxic ailments.

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and from over work, worry or other depressing causes, a worn out, tired body is unable to perform its manifold functions,

GRAY'S GLYCERINE TONIC COMP.

may be confidently relied upon to stimulate the appetite, promote digestion, increase assimilation, and not only restore functional vigor, but also build up the whole organism.

Unlike cod-liver oil and many other reconstructive tonics, "Gray's" has no contra-indication of season or age. Consequently, it can be freely administered all the year round—and to patients however young or aged.

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The above is an expression of Dr. Warden's opinion of Dr. Guelpa's purging-fasting treatment for diabetes by means of large quantities of

Hunyadi Janos Water

(THE NATURAL APERIENT)

including a regulated diet.

A reprint of Dr. Guelpa's original article, which appeared in the *Bulletin General de Therapeutique*, will be sent on application.

ANDREAS SAXLEHNER, New York.

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—DELICIOUS— —SUSTAINING—

THE IDEAL TONIC FOR FASTIDIOUS CONVALESCENTS

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which marks the period of *transition from girlhood to womanhood*, depends for its success upon the vital integrity of the blood stream, especially its hemoglobin content. A chloranemic circulating fluid, with its woeful lack of corpuscular bodies, renders menstrual initiation difficult and almost impossible.

Pepto-Mangan (Gude)

because of the rapidity and certainty of its vitalizing effect, comes promptly to Nature's aid in the establishment of normal functionation and at the same time markedly improves the general health and condition of the patient. Pepto-Mangan (Gude) is the one palatable, neutral, organic hemoglobinogenetic.

In 11 ounce bottles only; never sold in bulk. Samples and literature on request.

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In Scarlet Fever and Measles

there is no procedure that will contribute so markedly to a patient's comfort and well-being and at the same time prove so serviceable from prophylactic standpoints, as anointing the whole body at frequent intervals with

K-Y Lubricating Jelly

Itching and irritation are relieved at once, and while the activity of the skin is maintained, the dissemination of infectious material is also prevented. So notable are the benefits that result from the use of this **non-greasy, water-soluble** and **delightfully clean** product that its use has become a matter of routine in the practise of many physicians.

In addition to being "the perfect lubricant," K-Y has also been found an ideal emollient, and in no way does it demonstrate its great utility more convincingly than in the care of the skin during the exanthematous affections.

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FOR ALL

LIVER TROUBLES

It is a veritable specific for torpid liver, portal congestion, imperfect discharge of bile, bilious colic, hepatic inflammation, and in constipation and indigestion incident to atonic condition of the liver.

The formula is a suggestive one:

Acid Sodium Oleate,	1 gr.
Sodium Choleate,	1 gr.
Cathartein (Schmid), (Modified Phenolphthalein.)	½ gr.
Salicylic Acid, true,	1 gr.
Menthol,	1-10 gr.

A careful study of this formula will at once convince the practitioner of its value in the above indications.

Doctor, a postal card will bring you a liberal sample. *Write us today.*

This combination is also offered in liquid form under the name CHOLEOLITHINE.

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Valentine's Meat-Juice

Whenever the **Stomach** from any cause **Rejects Food** or **Medicine, Valentine's Meat-Juice** demonstrates its **Ease** of **Assimilation** and **Power** to **Restore** and **Strengthen.** In low forms of **Pneumonia** and **Exhaustion,** in the **General Debility** with **Impaired Digestion** of **Phthisis,** and in the **Depressing Prostration** following **Influenza** it is recommended by many practitioners throughout the world as invaluable in their treatment.

Influenza *and* Pneumonia.

J. E. Buchanan, M. D., *Professor Gynæcology, Homœopathic Medical College, Missouri, St. Louis:* "I have been using VALENTINE'S MEAT-JUICE successfully for a long time in my practice, and am using it now as the best available food for Influenza patients."

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Physicians are invited to send for brochures containing clinical reports.

For sale by American and European Chemists and Druggists.

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In
All
Septic Conditions
The remarkable properties of

ECHTISIA

Commend it to the progressive physician seeking prompt and permanent recoveries in these troublesome cases.

Non-poisonous — Antiseptic
Anti-purulent — Alterative

Each fluid ounce represents—Echinacea Angustifolia 120 grs.; Baptisia Tinctoria 24 grs.; Thuja Occidentalis 16 grs. and Phytolacca Decandra 16 grs.; each drug gathered in its prime and employed in green or fresh condition.

Echtisia
(Echinacea Compound)
Merrell

Is a constitutional and local antiseptic that must be used to be appreciated. Indicated in septicemia, typhoid and puerperal fevers, cancerous cachexia, fermentative dyspepsia, stomatitis, suppurating and infected wounds, boils, eczema and other forms of dyscrasia.

Used externally and internally.

Samples and Literature supplied on request to qualified men.

THE WM. S. MERRELL CHEMICAL COMPANY
511 East Fifth Avenue
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Publisher's Department

A Text-Book on the Practice of Gynecology. For Practitioners and Students. By W. Easterly Ashton, M. D., LL. D., Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Fifth edition, thoroughly revised. Octavo of 1,100 pages, with 1,050 original line drawings. Cloth, $6.50 net; half morocco, $8.00 net. Philadelphia and London: W. B. Saunders Company, 1912.

Many additions to this standard work on gynecology have given it a peculiar value to the practitioner. The use of the *x*-ray in gynecology has become so popular that the author comments on it particularly and he emphasizes the newer methods of treatment of syphilis, cystitis and other diseases. He goes into the subject of hormones, skin sterilization, gonorrhea and suppurative peritonitis very thoroughly.

The operative technic has been brought up to date in every particular. The text of the book is admirable, but we think its appearance could be decidedly enhanced by the use of more halftones in place of the line cuts.

The Practitioner's Visiting List for 1913. Price by mail, postpaid, to any address, $1.25. Thumb-letter index, 25 cents extra. Philadelphia and New York: Lea & Febiger, 1913.

A valuable pocket-sized book containing memoranda and important data, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. The wallet-shaped book is bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years.

The Physician's Visiting List. Edition for 1913, 62d year. Containing calendar, table for calculating period of uterogestation, tables of signs, incompatibility, poisoning, metric system, conversion of weights, dosage table in English and metric systems, etc., with blank leaves for visiting list, addresses, obstetric and vaccination engagements, records of births and deaths and cash account. Leather, 25 patients a week, $1.25, and 50 patients, $1.50. Philadelphia: P. Blakiston's Son & Co., 1912.

The Medical Record Visiting List. 1913 edition, containing calendar, pregnancy table, dosage table, equivalents, and other valuable data, with pages for obstetric engagements and practice, records for vaccination, address, cash account, etc. In red or black Morocco, $1.50 for 60 patients a week, $1.25 for 30 patients and $2.00 for 90 patients. New York: William Wood & Co., 1912.

Books Received.

All books received will be acknowledged in this column, and those which warrant further notice will be given a more extended review in a later issue.

Electricity in Gynecology. By Mary Cushman Rice, M. D., Professor of Gynecology in the Illinois School of Electro-Therapeutics. Cloth. 159 pages. Published in 1912 by L. I. Laing & Co., Chicago.

Man's Redemption of Man. By Sir William Osler, Bart. Cloth. Price, 50 cents. Published in 1912 by Paul B. Hoeber, New York.

Teachers' Manual of Biology. By Prof. Maurice A. Bigelow, of Teachers' College of Columbia University. Cloth. 113 pages. Price 40 cents. Published in 1912 by Macmillan Company, New York.

New Aspects of Diabetes. By Prof. Dr. Carl von Noorden of Vienna. Cloth. 160 pages. Price, $1.50 net. Being the lectures delivered at the New York Post-Graduate Medical School. Published in 1912 by E. B. Treat & Co., New York.

Himself. By Drs. E. B. Lowry and Richard J. Lambert. Cloth. 216 pages. Price, $1.00 net. Published in 1912 by Forbes & Co., 443 S. Dearborn Street, Chicago.

Diseases of the Stomach, Intestine and Pancreas. By Robert Coleman Kemp, M. D., Professor of Gastro-Intestinal Diseases in the New York School of Clinical Medicine. Second edition. Cloth. 1,021 pages, with 388 illustrations. Price, $6.50 net. Half morocco, $8.00 net. Published in 1912 by W. B. Saunders Company, Philadelphia and London.

Surgical Clinics of John B. Murphy, M. D. Volume I., Number V. (October). Octavo of 155 pages. Illustrated. Published bi-monthly. Price, per year, $8.00. Cloth, $12.00. Published by W. B. Saunders Company, Philadelphia and London.

Studies in the Psychology of Intemperance. By G. E. Partridge, Ph.D., formerly lecturer in Clark University. Cloth. 275 pages. Price, $1.00 net. Published in 1912 by Sturgis & Walton Company, New York.

Vaccine Therapy in General Practice. By G. H. Sherman, M. D., of Detroit. Cloth. 336 pages. Published in 1912 by Successful Medicine, Inc., Chicago.

Rectal Diseases, Diagnosis and Treatment by Ambulant Methods. By J. D. Albright, M. D. Cloth. 455 pages. 32 full page plates, some in colors. Price, cloth, $4.00 prepaid. Flexible leather, $5.00 prepaid. Published by J. D. Albright, 3228 North Broad Street, Philadelphia.

Anesthetics and Their Administration. By Sir Frederic W. Hewitt, M.V. O., M. D. (Cantab.,) anesthetist to the King, to St. George's Hospital, the London Hospital, etc. Cloth. 676 pages. Illustrated. Price, $5.00. Published by The Macmillan Company, London and New York.

The People's Medical Guide. For the patient, nurse and medical adviser. By John Grimshaw, M. D., D. P. H. (cantab.), etc. Cloth. 839 pages. Illustrated. Price, $3.00 net. Published in 1912 by The Macmillan Company, New York

Text-Book on the Pathogenic Bacteria and Protozoa. Seventh edition. By Joseph McFarland, M. D., Professor of Pathology in Medico-Chirurgical College. Cloth. 878 pages and 293 illustrations, some in colors. Price, $3.50 net. Published in 1912 by W. B. Saunders Company, Philadelphia and London.

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Sleep and the Sleepless. By Joseph Collins, M. D., physician to the Neurological Institute of New York. Cloth. 129 pages. Price, $1.00 net. Published in 1912 by Sturgis & Walton Company, New York.

(*Continued on p. 22*)

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Surgery and Diseases of the Mouth and Jaws. By Vilray P. Blair, M. D., Professor of Oral Surgery and Associate in Surgery in Washington University, St. Louis. Cloth, 638 pages. Illustrated. Price, $5.00 net. Published in 1912 by C. V. Mosby Company, St. Louis.

A Text-Book of General Bacteriology. Third edition. By Edwin O. Jordan, Ph.D., Professor of Bacteriology in University of Chicago. Cloth. 623 pages, fully illustrated. Price, $3.00 net. Published in 1912 by W. B. Saunders Company, Philadelphia and London.

The Chemic Problem in Nutrition. By John Aulde, M. D., of Philadelphia. Cloth, 410 pages. Illustrated. Price, $3.00, net. Published in 1912 by John Aulde, M. D.

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A very common cause of persistent nasal catarrh is the presence of mucous polypi in the nose. These are at first very small, and nearly always spring from the region of the middle turbinal, and hang free into the middle meatus. They also often start on the lips of the hiatus semilunaris on the outer wall where the mucous membrane is rather loose and easily becomes congested and œdematous. The discharge is frequently of a watery character, and until the polypi cause blocking of the middle meatus this may be all that patients complain of, except that they say that changes of weather affect them—dry weather favorably, and wet unfavorably, as regards the amount of stoppage and discharge.

Suturing Blood Vessels.

J. S. Horsley, Richmond, Va. (*J. A. M. A.*), describes a modification of Carrel's method of suturing blood vessels which he hopes will obviate certain difficulties, such as the liability of tangling the guy sutures, of their transference after suturing each third of the vessel and the relaxation of tension required. Another very practical objection is the difficulty of obtaining, at all times in the emergencies calling for the operation, the necessary skilled assistance. In his method the guy sutures are fastened to a special instrument called by him an "arterial suture staff" and the suturing is done by a continuous mattress stitch with which he everts and apposes the intima. The article is very fully illustrated, showing the instrument and the method of its use and the results obtained. The technic is described in full.

A Seasonable Reminder.

Urotropin in full doses (adults 15 grains, children 2-6 grains, three times per day), given in the early stages of a "cold," assisted by a mild saline laxative, is the modern method of "breaking it up," far preferable to and safer than quinine, phenacetin, acetanilid, etc. Based upon its proven excretion by the mucous membranes of the entire respiratory tract, systematic Urotropin medication is also recommended as a routine measure in acute rhinitis, tonsillitis, catarrh, bronchitis, influenza and grippe.

This, however, is only one new field of usefulness of this most diffusible of drugs, which to many practitioners is still known only as a urinary antiseptic. Physicians who have not yet received the new 20-page booklet on Urotropin, recently published by Schering & Glatz, New York, can obtain a copy of the same by addressing the firm, mentioning this journal. It is the best and most convenient way to become posted on Urotropin therapy up to date.

Tussis hysterica is best not treated as a catarrhal symptom in most instances. It should be ignored if tolerated, and not allowed to incur sympathy.

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Do Not Shoot Vicious Dogs.

Physicians should not fail to recognize the difference between a dog which bites because it is vicious and one which is in the early stages of rabies. In either case the dog should not be killed, but confined and kept under observation for seven days. If simply vicious it remains well and healthy. If, on the contrary, it is rabid it will develop either the maniacal or paralytic form of the disease and die within a few days. On the other hand, if the dog is shot in the first stages of the disease, a satisfactory laboratory diagnosis may be difficult and delayed a longer time than is required for the development of the characteristic symptoms in the dog.

Sterilization.

W. J. Manning, Washington, D. C. (*J. A. M. A.*), describes and illustrates an apparatus whereby instruments and hypodermic medication may be rendered reasonably safe, convenient and prompt as regards sterility, as well as simple from a practical standpoint. The apparatus can be best understood by the aid of the illustrations. The author says: "Briefly stated, the essential features are that under this system little or no attention need be paid to the matter of the mechanical cleanliness of instruments after this sterlizer is in operation with consequent relief of min where one is without skilled help; the annoyance of the sterlizing receptacle running dry or overflowing is avoided; the applied agents mentioned are convenient for prompt use, and the nearest tinsmith or plumber may readily construct a similar contrivance for those who may desire such innovations in their operating-rooms, connected with their present equipment."

Over 25,000 Americans are still sacrificed annually to the preventable filth disease—typhoid fever. About 300,000 suffer from it and are more or less impaired by it.

Catheter Knotted in the Bladder.

W. J. Anderson, Chicago (*J. A. M. A.*), reports an accident illustrating a dangerous possibility in the use of a soft rubber catheter. The patient had been using such an instrument on account of a supposed enlarged prostate. He had mislaid the catheter and purchased a section of rubber tubing, cutting its end obliquely and using it for the same purpose. He found himself, however, unable to withdraw it and later was able to pass a very small amount of bloody urine around it but not through it. A radiograph shows it knotted in the bladder and it was removed by suprapubic cystotomy. It was found in an unclassifiable knot in which it had tied itself after introduction into the bladder. The risk of such accidents, he remarks, would be probably greater in the female, in whom lengths of rubber tubing can be introduced without difficulty.

Pellagra.

M. L. Ravitch, Louisville, Ky. (*J. A. M. A.*), rejects all the hitherto proposed theories of the cause of pellagra and says it is probable to his mind that it is due to transmission of pathogenic trypanosomes by migratory birds, especially blackbirds. He does not claim entire originality in this but acknowledges his indebtedness to Dr. Eisenman, the Kentucky State veterinarian and his collaborator, Dr. Purdy, who came to the same conclusion. Last August there were many cases of a pellagra-like disease in horses and cattle in certain localities, in Kentucky, and in many instances there were human pellagrins in the same localities. There was a seasonal coincidence in the disease and the migration of blackbirds, which, according to Novy and McNeal, came first in the list of trypanosome-carriers among birds. Ravitch believes in the prophylaxis but very little in the treatment of pellagra, but hopes that a serum treatment for it will yet be found.

The Iodids and the Circulation.

In a paper in which the principal articles in the literature of the subject are reviewed, J. A. Capps, Chicago (*J. A. M. A.*, October 12), takes up the subject of the beneficial effect of the iodids in arteriosclerosis and the theories of their action. He finds that it can be properly deduced from the investigations that have been made that the iodids in therapeutic doses are not vasodilators in their immediate action as are the nitrites, and it has not been proved that their continued administration in the hypertension of arteriosclerosis lowers blood-pressure. It is improbable, he says, that the viscosity of the blood is sufficiently decreased by the iodids to have this effect. It has not been shown, moreover, that they protect the arterial walls from the degeneration, but it is not necessary to abandon our belief in their efficiency because they do not directly affect blood-pressure. Absorption of the cellular infiltration in the vessel walls will improve their circulation by enlarging their lumen in the internal diameter, and it is generally admitted that iodids are thus of use in specific endarteritis. Capps reviews the various theories that have been offered of the absorptive action of the iodids, and especially the proteolytic theory, which is supported by the febrile action the iodids sometimes produce. This reaction may be accounted for as follows: "The union of potassium iodid with antibodies already present in the infected individual gives rise to a ferment which has the power of digesting certain proteids (granulomatous cells, gumma, etc.). In this process toxic substances are formed which create local inflammation in the lesion and at times a general febrile reaction." If this hypothesis is correct we have a selective action of the iodids instead of a specific one in the diseases in which they are most used. Capps' summary of his study of the question is as follows: "Iodids in therapeutic doses are not active vasodilators and when long continued do not materially affect blood-pressure. Iodids do not alter the viscosity of the blood to any marked degree. The iodids probably owe their beneficial influence in syphilitic arteriosclerosis to the absorption of the cellular exudate in the arteries. The absorption may be brought about by the formation of a proteolytic ferment which is created by the union of iodid with antibody and which has a selective action on the luetic cellular exudate. It is possible that this selective digestive action is operative to a lesser degree on the cellular exudate in arteriosclerosis due to other causes than syphilis."

Symposium on Syphilis.

The November number of the *Therapeutic Digest* of Cincinnati contained a valuable symposium on syphilis, to which Drs. Otto Juettner, A. W. Nelson, S. J. Goldberg, A. F. Morgenstern, A. E. Hussey, W. C. Harris, Ralph Reed, E. S. McKee, Travis Carroll, L. J. Krouse and C. T. Souther, all of the faculty of the Cincinnati Polyclinic, contributed.

The authors, after considering the disease from every angle, advise as curative agents salvarsan and mercury. The reports are based on hundreds of cases and form a valuable addition to the literature on syphilis. This issue of the *Digest* is filled with helpful hints to the practitioner.

Unique Visiting Card.

The visiting card of Dr. Weatherley, of 1604 South Broad Street, Philadelphia, contains on its reverse side the following:

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Medical Progress.

W. A. Jayne, Denver (*J. A. M. A.*, October 12), gives a comprehensive review of the progress of scientific medicine. Like other sciences, it has passed through several stages—first, that of observations of facts; second, the analytic stage, which began about the end of the eighteenth century with an awakening of the true scientific spirit in medicine, and the third, which began within the last few decades. In this the advances come from determining the causative factors, the reaction between the invading organisms and their host and the further knowledge of the cell and its activities. Preventive medicine has already grown to enormous proportions and achieved the most brilliant results in many diseases. Instead of an art, medicine is now becoming a science, and has made a record mark in its progress. The address does not lend itself well to abstracting, but is an interesting and well-written general exposition of the medical advances up to the present day.

Preventive Gynecology.

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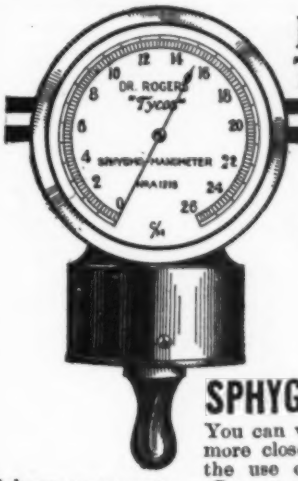

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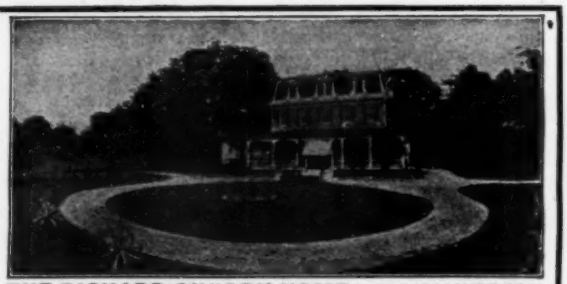

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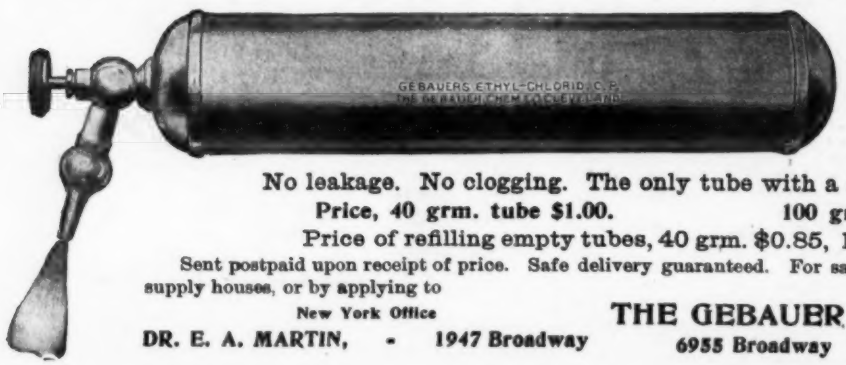

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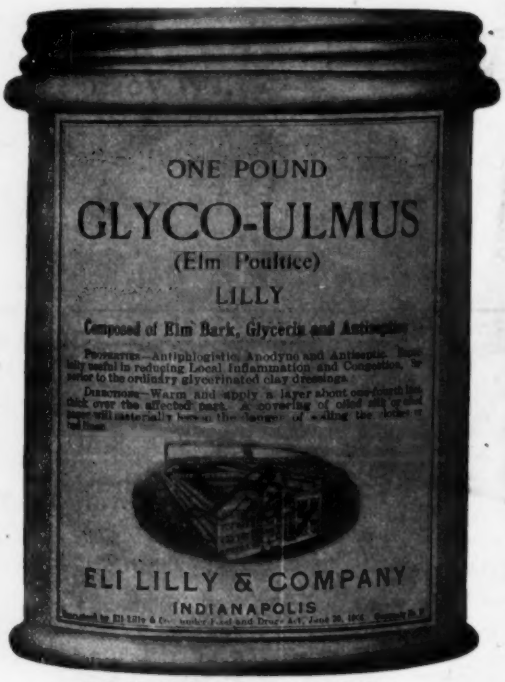
ANTIPHLOGISTIC, ANODYNE AND ANTISEPTIC

Effective in reducing Local Inflammation and Congestion, and in relieving the pain incident to these conditions.



REDUCED FAC-SIMILE OF PACKAGE

Superior to the Ordinary Glycerinated Kaolin Dressings

¶ Contains a much larger percentage of GLYCERIN.

¶ Is lighter—a very important advantage when large surfaces are to be covered, as in pneumonia.

¶ Easier to apply.

¶ Easier to remove.

¶ Cleaner.

¶ Has greater absorptive capacity.

FOR TREATING—Boils, Bruises, Sprains, Felons, Burns, Scalds, Ulcers, Infected Wounds, Pneumonia, etc. Useful whenever local inflammation is to be reduced.

Physicians are asked to address requests for further information or samples to the home office, Indianapolis.

Supplied in 6-ounce and 1-pound jars by the drug trade

ELI LILLY & COMPANY

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